

MODERN PACKAGING



JULY 1955


IN THIS ISSUE:

*Sporting goods build new volume
with package design that tells and sells*

Resyn 50R 2128

surprisingly versatile

for film laminations



	Aluminum Foil	25% Rag Bond Paper	Saran	Cellulose Acetate	300 pt Cellophane	450 MST 53 Cellophane	N-2 Pliofilm	100 Mylar "A"	Cellulose Acetate Butyrate	Polyflex Polystyrene	Kodapak IV	Vinyl	Polyethylene
Aluminum Foil	—	E	E	E	E	E	P	G	G	E	E	E	P
25% Rag Bond Paper	E	E	E	E	E	E	E	E	E	E	E	E	P
Saran	E	E	E	G	E	E	P	G	P	E	E	E	P
Cellulose Acetate	E	E	G	G	E	E	P	G	G	E	E	E	P
300 pt Cellophane	E	E	E	E	E	E	P	G	G	E	E	E	P
450 MST 53 Cellophane	E	E	E	E	E	E	E	E	E	E	E	E	P
N-2 Pliofilm	P	E	P	P	P	E	G	G	G	E	G	E	P
100 Mylar "A"	G	E	G	G	G	E	G	G	G	E	E	E	P
Cellulose Acetate Butyrate	G	E	P	G	G	E	G	G	G	G	G	E	P
Polyflex Polystyrene	E	E	E	E	E	E	E	E	G	E	G	E	P
Kodapak IV	E	E	E	E	E	E	G	E	G	G	E	E	P
Vinyl	E	E	E	E	E	E	E	E	E	E	E	G	P
Polyethylene	P	P	P	P	P	P	P	P	P	P	P	P	P

KEY

E
indicates excellent commercial bond.

G
indicates that adhesion obtained is good and is adequate for many purposes.

P
indicates bond is not commercially satisfactory.

RESYN 50R 2128, an internally plasticized polyvinyl acetate copolymer solution, laminates a surprising variety of films—as shown in the above chart. It is soft, tacky and markedly different from straight polyvinyl acetate. Bonds formed are permanently flexible.

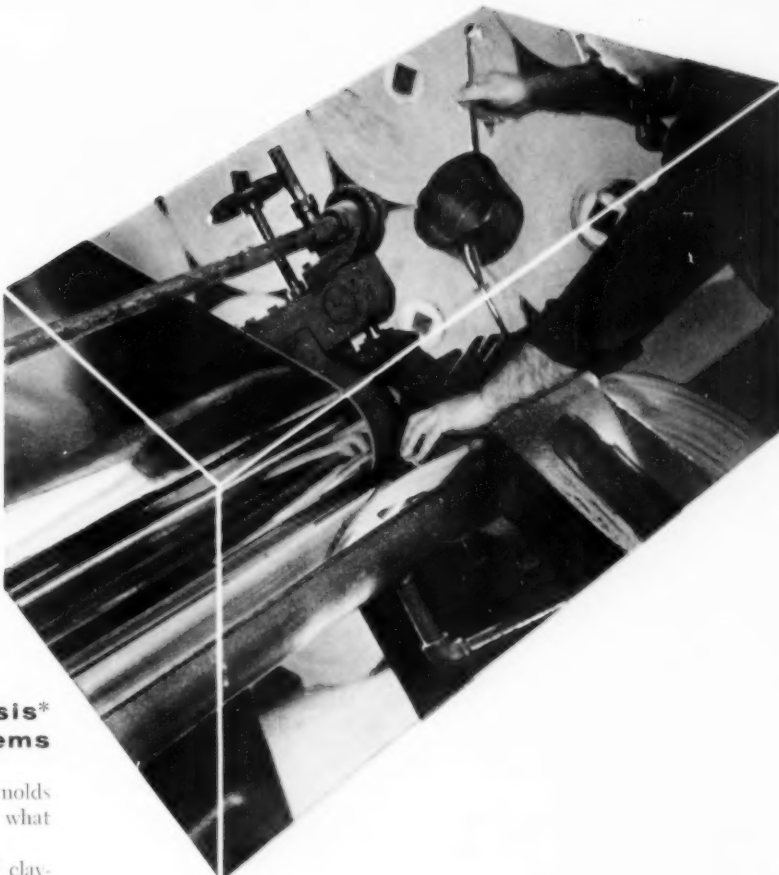
RESYN 50R 2128 can be thinned with practi-

cally any organic solvent, including the lower cost aromatic hydrocarbons. Write for more information.

Other adhesives are available for specialty laminations where specific requirements must be met. This "tailoring" of products is possible because of National's ability to make and to formulate unusual copolymers having unique adhesive properties.

National
ADHESIVES

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*Gair Package Analysis is a service designed to blueprint a successful carton for your product. Your nearest Gair representative will be glad to give you the full story. No obligation, naturally.



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FOLDING CARTONS
SHIPPING CONTAINERS • PAPERBOARD

JULY 1955

MODERN PACKAGING

JULY 1955, Vol. 28, No. 11

Bundlers turn to film	75	More easy-open ideas	108
With today's demand for fraction-of-case units of distribution, cellophane bundling proves practical and economical.		Six new examples show packagers' increasing concentration on consumers' complaints about products that are hard to get at.	
Alka-Seltzer's innovations	81	Mobiloil speed-up	111
Foamed polystyrene plug replaces cotton in glass vial; four-tablet foil pack provides pocket-or-purse convenience.		New 600-a-minute unscrambler and high-speed filler give motor-oil can line a comfortable margin over daily requirements.	
Rigid vinyl food package	82	Display Gallery	114
It makes its bow in a molded two-piece container which appears to meet all requirements for Pitt's conserved fruits.		Canada Dry's picnic promotion . . . cigarettes, family style . . . self-stacking razor sets . . . mops in window carton.	
Success story	84	Saran Wrap automatized	118
Zippo gambled on a tricky molded plastic package for flints and after three years finds sales still running 40% higher.		Dow's spanking new consumer-film plant has new packaging devices designed to boost production to 5,000,000 rolls a month.	
Keeping up with baby	86	Locked-in watch band	120
After 10 years, Kleinert's finds changed merchandising conditions call for a complete redesign of baby-goods line.		Elgin's simple plastic tray with slip-on end sleeves holds band securely, yet leaves it readily accessible for examination.	
Sporting goods	88		
This growing billion-dollar industry is getting its share of leisure-time money with packaging that tells and sells. A MODERN PACKAGING Industry Survey.			
Design Histories	94	Technical	
Ham in heavy foil wrapper . . . cheese case splits in two . . . interlocking can nozzles . . . new jelly tumblers.		A tester for pliability	127
New look on the supply-house shelf	96	It establishes wrappability of materials as a distinct property and may offer standard means of measurement. By THOMAS P. WHARTON.	
Well-designed set-up box and polyethylene bag bring sales appeal to an Anaconda product, eliminates laborious assembly.		Insectproofing of foods	131
Polyester film is here	98	Mechanical exclusion with well-designed, tightly glued package is best bet; chemical treatment can help. By H. E. GRAY.	
New material of super-strength and super-clarity, despite high cost and handling problems, finds immediate applications in packaging; here are first examples.		Questions and Answers	136
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Special-offer carry carton . . . capper top on cellophane bag . . . Armour's new detergent . . . other new ideas.		Plants and people	146
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* Reg. U. S. Pat. Office

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Feed and open cartons; insert single or multiple loads; glue or tuck flaps of cartons — airplane or reverse tuck. Fold and insert leaflets, booklets, corrugated liners; print or stencil code; are convertible to different sizes of cartons and loads.

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MODERN PACKAGING is regularly
indexed in *Industrial Arts Index*.



MODERN PACKAGING

Irradiated nonsense

THE OUTLOOK FOR FOOD STERILIZATION by electronic or atomic radiation, like some of the other wonders of the atomic age, has been grossly exaggerated.

A nationally distributed newsletter with a large following among responsible business men recently had this to say:

"Atomic radiation to preserve food is making very rapid headway, and threatens to start a revolution in food processing in a year or two. Housewives may be able to buy meats, vegetables, fruits, maybe even milk that will keep completely fresh on pantry shelf in airtight containers. Processors of canned and frozen food are genuinely worried lest atomic preservation make a lot of the existing methods obsolete."

The facts are that radiation as a food process is *not* making rapid headway (except in laboratory experiments with cathode rays such as have been reported in the Technical Section of this magazine from time to time); informed processors of canned and frozen foods are *not* worried and no revolution can be even dimly perceived.

It is important that the packaging field have the facts straight, because the radiation process—if it were to become practical—could cause radical changes in the kinds and amounts of packaging required.

It has been amply proved that with sufficient exposure to ionizing radiations—whether from cathode rays or atomic radiation—the bacterial process can be stopped and food kept fresh and attractive in appearance. There's just one big difficulty: It tastes awful.

No need to mention the other drawbacks—the half-million-dollar cost of an electrostatic generator; the danger and difficulty in handling radioactive materials and the expense of shielding the processing operation. The taste problem alone—if it can ever be solved—will occupy the best brains of the food industry for a good many years.

Experiments will continue and should be closely watched by everyone connected with packaging. As cost comes down, there likely will be practical applications of radiation for sterilization of drug products, where taste is not involved. But for the food industry, as the National Canners Assn. has wisely advised its members, it's a good deal more than just around the corner.

The Editors

MODERN PACKAGING

Dobeckmun creates...



protection for the table and the nursery



out of "show-window" polyethylene!

What have supermarkets and toy stores got in common? They sell more of whatever they're selling when the latter is packed in Dobeckmun polyethylene. And so may you . . . whether you're in produce or toys or drugs or dry goods or whatever.

Why *Dobeckmun* polyethylene? It's quality film. Sturdy—really protects the contents. Clear—to promote sales. Polyethylene "breathes"—helps keep perishables from perishing. The price is low and the display value is high. And Dobeckmun makes polyethylene bags, printed and plain, of all sizes and shapes for products of all sorts and descriptions.

Dobeckmun is a *specialist* in packaging. Write or call:



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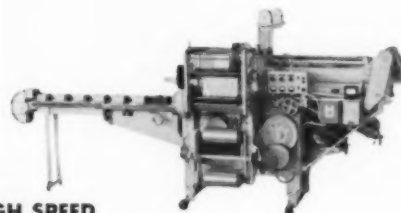
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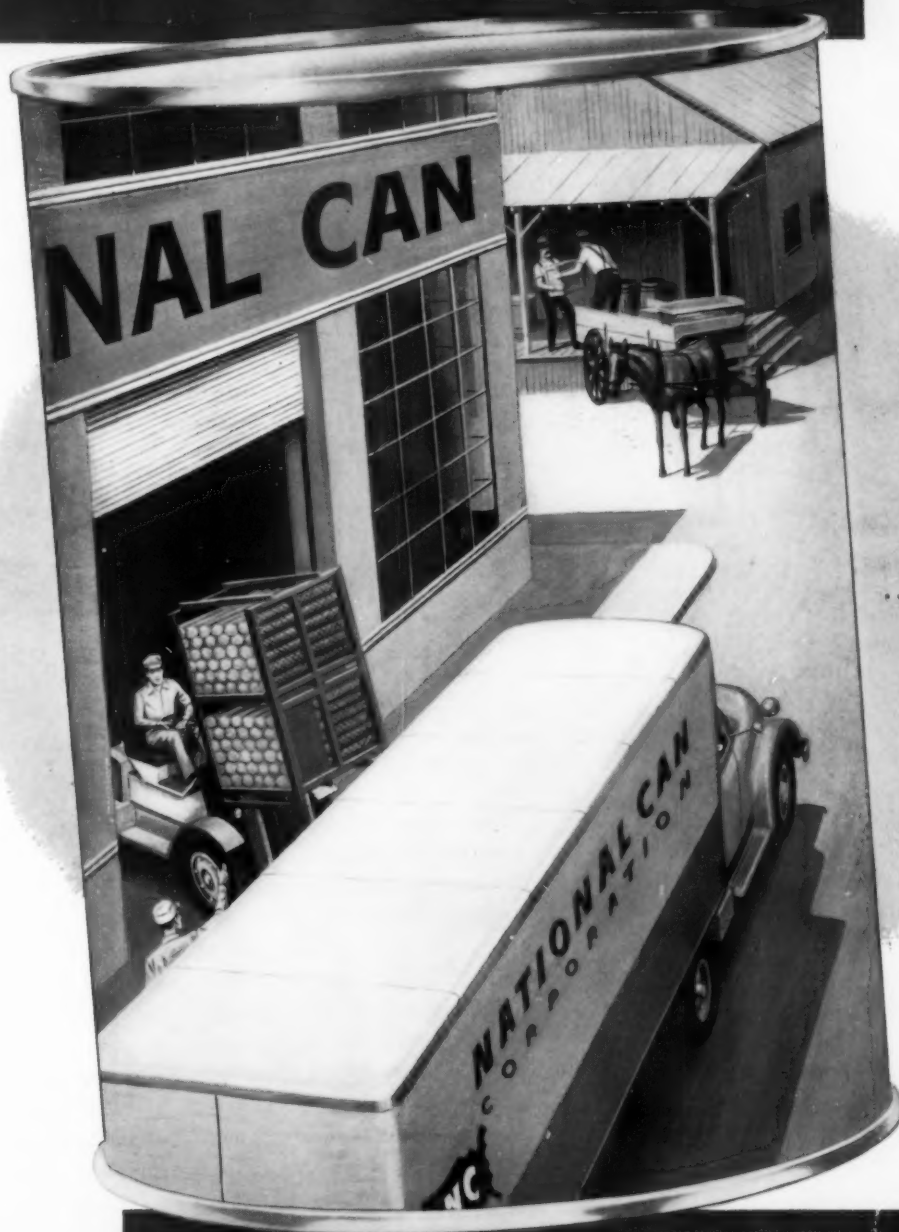
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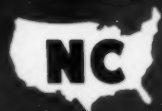
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Torn- package problem licked

...sales upped 170%

by Kelling working with **ARVEY**



The knottier the problem, the better Arvey package specialists like it!

The Kelling Nut Co., Chicago, famous for quality and freshness, determined to say good-bye, once and forever, to transparent bags that broke, too often, before they left the dealer's hands. A last farewell, and not a fond one, to packages that failed to seal in Kelling freshness and goodness, instead of keeping them intact clear through to the customer's table.

Arvey had the answer! A tough, double-laminated, crystal clear material which we call RV 330. Tough enough to stand up under rough handling; tight enough to seal in the delicious freshness of Kelling Nuts indefinitely. Printed in bril-

liant color, before lamination, then bonded together with the printed surface inside, where printing ink can't crack, scrape, or pick, can't come in contact with contents.

How does Kelling know the new package is right? That it rings the bell with salesmen, dealers and consumers? *Sales already have jumped 170%.* That's pretty sound evidence!

The exclusive Arvey Lamcote Process brings eye-appeal, sales-appeal, to any packaged product, particularly if there is a retailing advantage in the product being seen. Why not discuss with us the many advantages of Arvey packages and service, as applied to your business! Phone, wire or write the nearest Arvey office, NOW!

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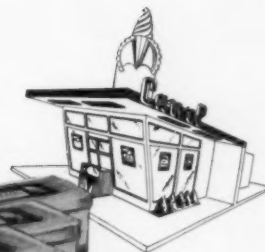


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NO PRODUCT CAN BE ANY BETTER THAN THE PACKAGE IT'S IN

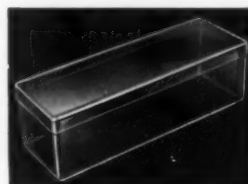
Carvel Drive-Ins build take-home business...



in **TRI-STATE** rigid plastic boxes

Ice cream in crystal-clear take-home packs that let the cool, creamy, colorful contents show through...was a packaging innovation that paid off for CARVEL ICE CREAM STORES. The initial Tri-State "clear pack" promotion push-buttoned a take-home business that today accounts for 50% of the volume of these famous drive-ins. Eat-in-the-car customers are tempted by the mouth-watering take-home pack...by the easy-storing, easy-serving rigid plastic bonus box. The Carvel success story is but one highlight in the Tri-State case-history book. For shipping protection, better

self-service, more business via a bonus box...look into Tri-State. There's a fit...and an unlimited future for your product in the world's greatest assortment of crystal-clear, rigid plastic boxes.



Tri-State Box No. 160
2 3/4 x 8 3/8 x 2 3/8"

From a huge variety of stock sizes and shapes, or we will mold large quantities to your specifications.

Look into

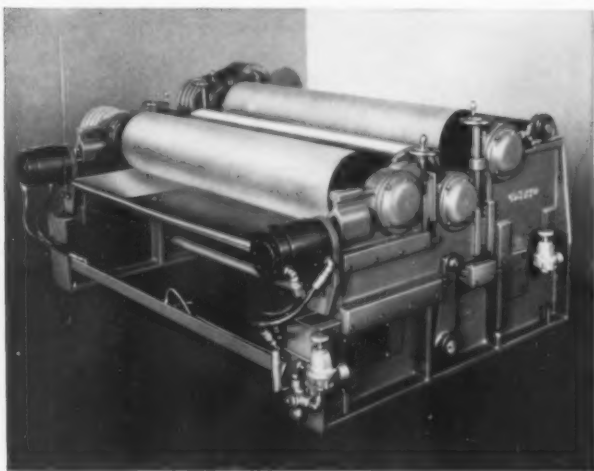


TRI-STATE SHOW WINDOW PACKAGING

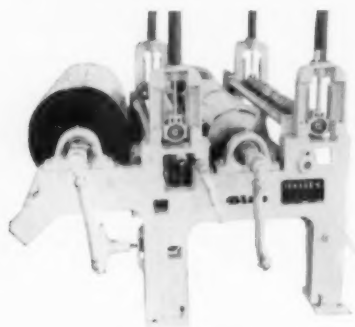
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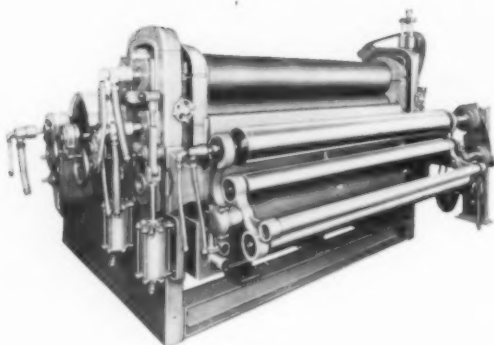
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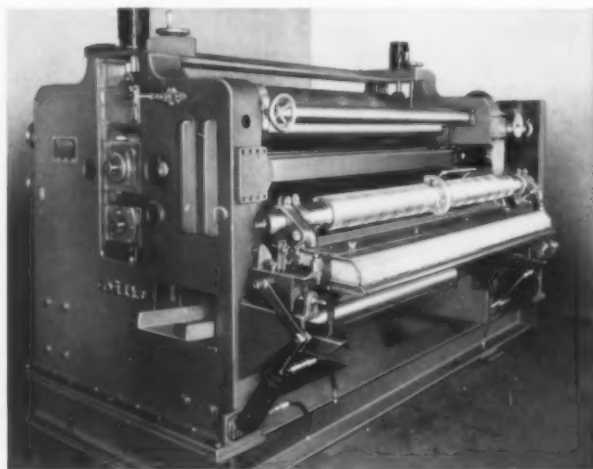
In all probability, Dilts has a machine to meet your specific coating requirement regardless of what materials are involved. If not, they have the facilities and knowledge to solve your problem. *When it comes to coating . . . come to Dilts.*



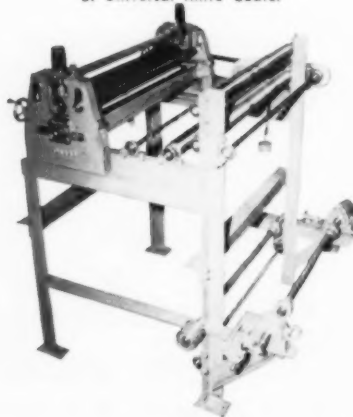
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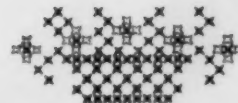
4. Contracoater® Reverse Roll Coater with Warren Air Knife



5. Universal Knife Coater



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ALUMINUM
PACKAGING

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Reynolds Metals Company,
General Sales Office, Louisville 1, Ky.



Urged by national magazine and TV advertising... shoppers look for the Reynolds Wrap Aluminum Packaging Seal...find it on more and more products. See store displays of foil packaging "under the Rainbow."











Not when you use KIMPAK !

New KIMPAK 301 is the practical solution to safe packaging of fragile cosmetic containers. With the ability to absorb liquids up to 16 times its own weight in a matter of seconds, new KIMPAK 301 more than meets Parcel Post regulations. New KIMPAK 301's shock-absorbing characteristic provides positive cushioning protection against these major causes of breakage:

1. Shock and rough handling. KIMPAK is a soft, cushioning material that forms an effective shock absorbent barrier against these shipping hazards. It molds itself readily to irregularly

shaped items and eliminates dangerous high and low spots.

2. Movement within the package. KIMPAK is absolutely uniform in thickness from end to end and edge to edge. This permits a tight, snug pack with the fragile containers nestled into the KIMPAK to prevent movement.

Breakage is but *one* of the problems encountered in cosmetic packaging. Specify KIMPAK (either decorative white 201 or the new low-cost utility 301) and these problems are solved. For more details concerning KIMPAK, mail coupon below.

SPECIFY KIMPAK TO SOLVE THESE INTERIOR PACKAGING PROBLEMS:

Leakage
Breakage
Conformability
Ease of handling
Appearance
Cleanliness

Whatever your protective interior packaging requirements, there is a Kimpak specification that does the job... better!

Kimberly Clark
INTERIOR PACKAGING
KIMPAK 

KIMBERLY-CLARK CORPORATION
Neenah, Wisconsin

We would like to learn how KIMPAK can provide better protection for our products. Please send complete information.

Name

Firm

Street Address

City Zone State

Three stories ...

Machines ...

Modern Equipment and Advanced Technique

Not an aim—but a fact—promised delivery of tubes and containers on time. A record with a 30 year history to say it's so.

A tour of the plant verifies this ability of Sun Tube to deliver when promised. Surprises you with continuous chains of tubes moving quickly, hygienically from one machine to the next. Accorded to be the most modern machines in the field. Meeting delivery with efficiency.



Minds ...

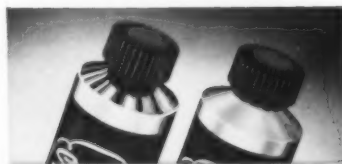
Vigorous, Progressive, Young

Men with many years of buying experience have remarked on the alertness with which the men at Sun Tube effect new methods of production whenever a manufacturer is ready with a new package.

Example—this aerosol container—small enough, decorative enough to meet the demands of the cosmetic field.

Another example—the extension of decoration up over the shoulder of the tube—for a new selling-look in tubes.

Vigorous management and personnel. The energy, the ingenuity to move your package into reality.



Movement ...

The Extra at Your Beckon

The pace of getting things done.

Engineers at your call—to materialize your specific packaging needs—fast.

Designers eager to work with you—to make your package stand out.

Factory men and women—knowing their jobs—working with the best in machinery and plants.

Administration—mindful of deliveries and quoted figures—the kind of administration that explains Sun Tube's 30-year reputation for the best.

All this is yours in every crisp, white delivery carton with the bright red letters—SUN TUBE.



ending in better packaging ...

SunTube

CORPORATION
HILLSIDE, NEW JERSEY

SUN TUBE CORPORATION, HILLSIDE, NEW JERSEY, Waverly 3-0400



St. Louis 1, Missouri: Marvin Yates Co., Arcade Building
Cincinnati 8, Ohio: Ralph H. Auch, 3449 Custer Road
New Orleans 19, Louisiana: R. P. Anderson Co.,
925 N. Solomon Pl.
Houston 19, Texas: R. P. Anderson Co., 5643 Overbrook Lane
Lombard, Illinois: Delmar Ring, R.R. #1, Swift Road

Dallas 2, Texas: R. P. Anderson Co., 1122 Texas Bank Building
West Coast: Wm. J. Steepker, 301 E. Colorado, Arcadia, California
Canada: Sun Tube Corp., 145 Spruce Street, Ottawa, Ontario
Mexico: Tubos de Estano, S. A. de C. V.,
174 Oriente No. 267, Colonia Montezuma, Mexico, D. F.

CROWN
MeritSEAL

**GUARANTEES
SURE CLOSURE
WITHOUT FREEZING**



exclusive patented
thread spins on
and off easily,
protects your product
with a snug,
airtight seal

Crown MeritSEAL jar caps give *positive protection* to the just-bought freshness of your products... and are *guaranteed* not to freeze to the container! Its exclusive, patented thread construction needs only a simple twist to make a snug, airtight seal that assures consumers that your product stays fresh and effective for the life of the jar. MeritSEAL caps add eye-appeal to your product, too. The hard, scratch-resistant coatings are handsomely lithographed in sparkling jewel-tone colors that stay bright.

LARGEST RANGE OF SIZES IN THE INDUSTRY...
MeritSEAL is now available in 17 sizes: 33, 38, 40, 43, 45, 48, 51, 53, 58, 60, 63, 66, 70, 75, 83, 89 and 100 mm. Write today for full information and samples! Simply state color preference and sizes needed.

CROWN
MeritSEAL

CROWN CORK AND SEAL COMPANY, INC.
Specialty Division • St. Louis, Missouri

NEW

CROWN
Seal STIK

**CONTAINERS MAKE
YOUR PRODUCT EASY
TO CARRY**



Twist ... it's out ...



Twist ... it's in!



**3 new handy sizes,
in any color ...
here's the modern
packaging container**

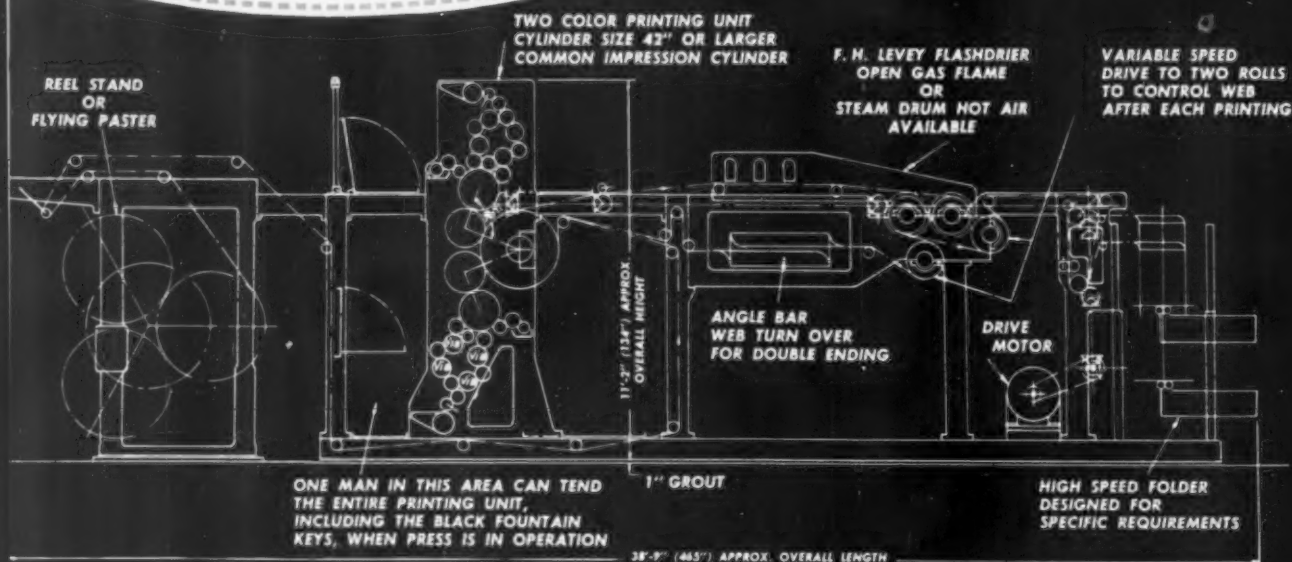
Now! Your cosmetic products can travel easily and safely in milady's purse. New Crown SealSTIK plastic containers keep your product fresh under a jar-like protective seal. So easy to use... just like a lipstick! And besides famous Crown closure protection, SealSTIK gives colorful sales-appeal, new convenience, and practical versatility to your product. Made of durable plastic, new SealSTIK is a natural container for colognes, deodorants, chapsticks, insecticides, and many other products.

CHOOSE YOUR SIZE AND COLOR NOW... SealSTIK is now available in handy 1/4, 1/2, and 1 ounce sizes. The stunning range of colors is unlimited. Write today for **FREE** samples and complete information. Please state size and color you need.

CROWN
Seal STIK

CROWN CORK AND SEAL COMPANY, INC.
Specialty Division • St. Louis, Missouri

announcing...



A revolutionary new

TWO-COLOR PERFECTING WEBB OFFSET PRESS

Prints two colors two sides from a SINGLE 2-color printing unit by double-ending
Prints webs up to 40 inches wide

LESS EXPENSIVE . . . a high speed, high quality press at a very reasonable cost.

SIMPLE OPERATION . . . 1 man can handle all controls and cylinders from 1 station.

EASIER MAINTENANCE . . . fewer and more rigid parts.

QUICKER STARTING AND MAKE-READY . . . only 2 plates, 2 blankets, and 2 fountains to clean. Half as many rollers to set.

- **PRECISION REGISTER** . . . common impression cylinder; also permits use of wider range of papers. Full circumferential and running side-to-side register provided.

- **A PACKAGE UNIT** . . . includes dryer, folder, motor drive, reel stand or flying paster and roll coverings.

- **FULL CIRCUMFERENCE PRINTING** . . . complete cylinder less only 1/2 inch.

Plates tightened from both ends and can be cocked 1/16" in the cylinders.

Many new and important innovations suggest that progressive printers will want to obtain full details immediately. Write, telephone or wire the Machinery Division in Philadelphia. Tel. HOward 5-1500.



FRED'K H. LEVEY CO., INC.

PRINTING INK DIVISION COLUMBIAN CARBON CO.

Makers of Fine Printing Inks Since 1874

380 Madison Ave., New York 17, N. Y.

BROOKLYN PHILADELPHIA CHICAGO

ATLANTA, GA. • MONMOUTH JUNCTION, N. J. • SPRINGFIELD, O.

BOSTON, MASSACHUSETTS • LOS ANGELES, CALIF.

MACHINERY DIVISION — DRYING EQUIPMENT; ALLER PLATES • PHILADELPHIA



A winner on points too!

A tray and PLIOFILM overwrap can make a mighty attractive package for products that aren't usually thought of as glamorous—and the distributor point sets shown here are a good example.

But PLIOFILM adds a lot more than sales appeal. Its superb moisture-resistance helps prevent rust. Its superior strength prevents broken packages. And its adaptability to packaging machinery cuts your wrapping costs to a minimum.

Whether you're packaging automobile parts or poultry, meats or cheese, the Goodyear Packaging Engineer can show you how to benefit by these PLIOFILM advantages. Write him at

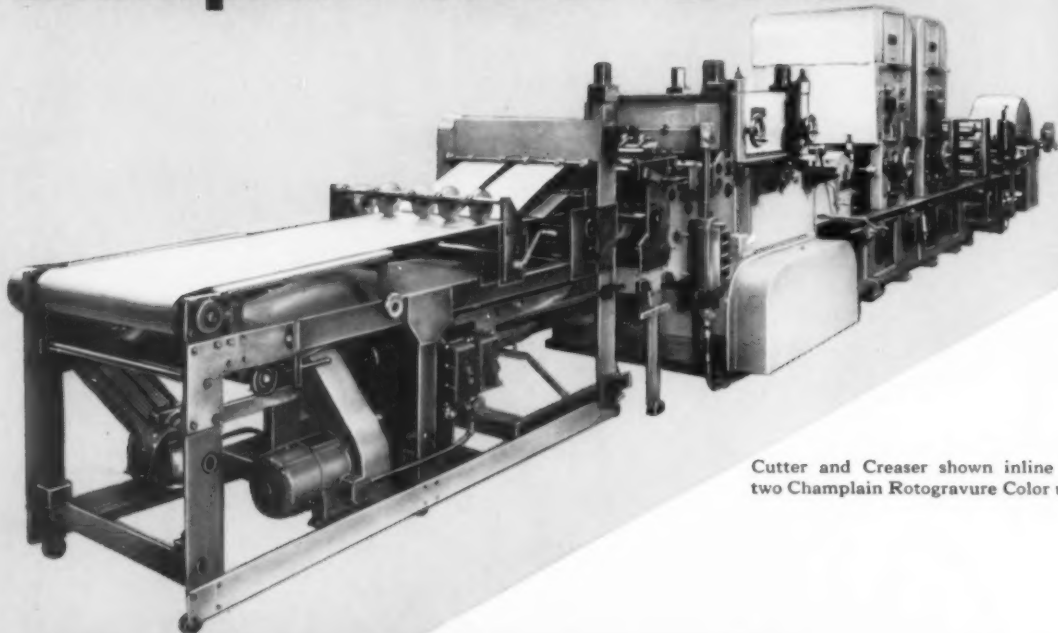
Goodyear, Packaging Films Dept. G-6418,
Akron 16, Ohio

Good things
are better in

Pliofilm


Pliofilm, a rubber hydrochloride—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

From this **NEW** roll-fed Champlain Cutter-Creaser



Cutter and Creaser shown inline with two Champlain Rotogravure Color units.

PLATEN PRESS QUALITY CARTONS at better than cylinder press speeds

At last — a Cutter-Creaser that puts the manufacture of high quality but low-cost cartons well within the reach of *all* carton makers. In *one* pass, it cuts, creases, and automatically strips cartons from a continuous web — and brings to the carton manufacturer all these **PLUS** advantages:

- **INCREASED PRODUCTION RATE**... 7,500 to 10,500 impressions per hour.
- **MAXIMUM QUALITY**... the high quality of platen press cutting and creasing — at better than cylinder press speeds.
- **THOROUGH AUTOMATIC STRIPPING**... all intricate internal and interlocked scrap is stripped and carried away *automatically*.
- **LOW DIE COST**... with inexpensive steel rule and block or jig dies.
- **CONSISTENT ACCURACY**... patented intermittent feed insures uniform accuracy, even at highest speeds.
- **MINIMUM DOWN TIME**... changing of dies and make-ready is only a matter of minutes.

By itself, this new Cutter-Creaser has no equal. But when used *inline* — with rotary printing equipment — you gain not only the advantages of the Cutter-Creaser but *all* these *additional* advantages:

- **ABSOLUTE MINIMUM HANDLING OF STOCK**... "once through the press" principle means no carting and storage between Multi-color Printing, Lacquering, Die-Cutting and Stripping.
- **IMMEDIATE INSPECTION OF FINISHED CARTONS**... from roll stock to finished cartons takes only a few seconds.
- **ACCURATE REGISTER**... quick, one-pass operation of all inline equipment allows no time for change in character of stock.
- **MINIMUM SET-UP TIME**... no die impression needed for printing register—dies and plates are pre-matched.



Champlain &



Champlain manufactures a complete line of rotogravure, flexography, rotary letterpress and allied equipment for packaging and specialty printing.

Write today for catalog of Champlain press equipment and full information on the Champlain Cutter-Creaser Champlain Company, Inc., 88 Llewellyn Avenue, Bloomfield, N. J. Chicago Office: 520 N. Michigan Avenue, Chicago 11, Ill.

8007



PROTECTED?

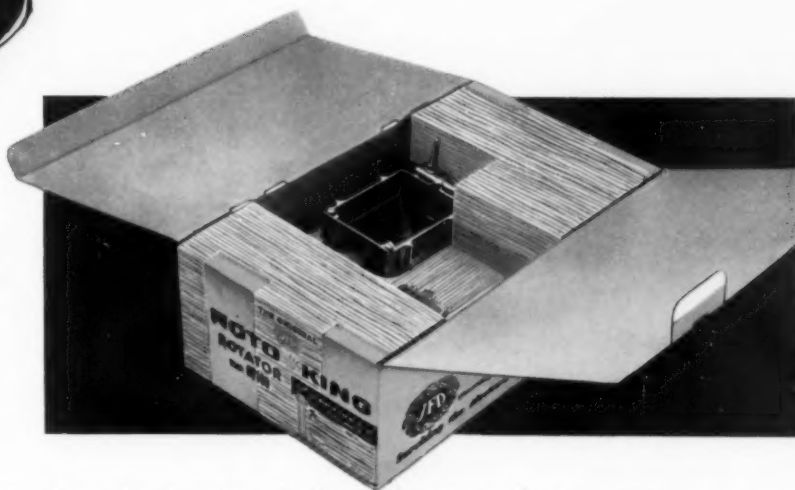
YOU

BET

If product protection is important, think of GRAND-CITY.

The J.F.D. Manufacturing Co., world's largest manufacturer of TV antennas and accessories, uses a Grand-City "COLOR-PAK" for its "Roto-King" antenna rotator. This ultra-sensitive mechanism is packed with custom-fit cushioning to insure absolute protection.

Ship and display your product in a "COLOR-PAK" container. Call or write today. One of our sales representatives will call at your convenience.



Over 40 years of packaging America's foremost products

GRAND-CITY CONTAINER CORPORATION

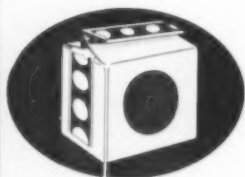
2001 TONNELLE AVENUE, NORTH BERGEN, N. J.

LONGACRE 4-1515 • UNION 5-4400

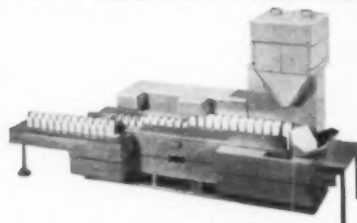
kill drudgery . . . increase production with Arenco packaging machines

• There's no need to use noisy, hard-to-handle machines that tire operators, resulting in improper packaging and general inefficiency. Arenco machines, designed with many features requested by packaging plant management out of their actual experiences, provide greater operator comfort than any other packaging machines made.

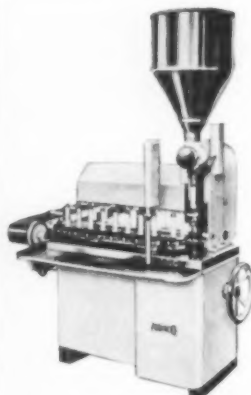
Truly, Arenco machines are the ultimate in smooth-running, high-performance equipment. For example, consider the four fine machines shown here.



Arenco Closure with sealed triple fold—Neat, tight, practical. For dust-proof and tamper-proof seals. The closure that permits opening bag without tearing, and easy reclosing, a feature consumers like.

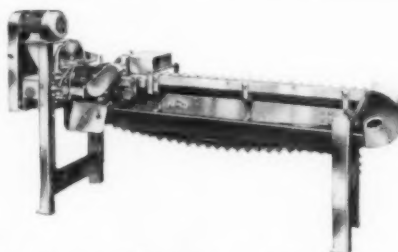


Powdered-Materials Packaging Machine—Fills from 1 to 5 pounds of flour, cereals, etc., in economical square-bottom, self-opening bags. Bags are handled by our exclusive automatic bag opening and feeding mechanism. Machine provides extremely accurate weights.



Collapsible Tube, Jar, and Vial Filling Machine—Used for packaging thick compounds, creams, liquids, and semi-liquids. It permits the quickest, easiest cleaning and changeover of any tube filling machine available, offers the "no tube, no fill" feature, and operates with exceptional quietness.

Cigarette Packing Machine—Handles a wide range of cigarette dimensions and package types with top-notch performance. Features modern central lubrication ("push one button, the machine is lubricated"). Our new, lightweight cigarette cassettes and automatic tray handling arrangement reduces drudgery, increases efficiency.



Fish Cleaning Machine (heading and gutting)—This machine eliminates all hard work in preparing herring, sardines, and similar fish for curing or canning. Removes head, tail, and intestines mechanically, leaves milt, roe, and meat clean and intact, and with no bruising!

Our extensive line includes machines for many packaging purposes.

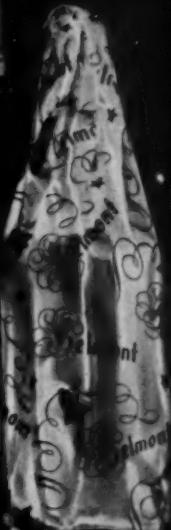
We'll be glad to send illustrated leaflets with complete data to you.



ARENCO Machine Co. INCORPORATED
25 West 43rd Street, New York 36, N. Y.

Representatives:

R. P. Anderson Co., 2503 West Mockingbird Lane, Dallas 19, Texas
Tom McLay, P. O. Box 14, Port Deposit, Maryland
Packaging Equipment, Inc., 2013 Olive St., St. Louis 3, Missouri
Kruse Packaging Machinery, 5807 W. North Ave., Chicago 39, Illinois
J. W. Leser Co., 4408 W. Jefferson Blvd., Los Angeles 16, Calif.
P. S. Equipment Co., 2281 Scranton Road, Cleveland 13, Ohio



Bagged

for

YOU



Fast PRODUCTION Fast SALES

There's a big difference in bags—that means a big difference in the *results* you get! Whatever your product, you'll get the best results with Milprint—the most skilled design service, and the widest selection of materials, constructions and printing processes. Bag it *right*—call your Milprint man—*first!*

Milprint* INC.
PACKAGING MATERIALS
LITHOGRAPHY & PRINTING

Printed Cellophane, Pliofilm, Polyethylene, Saran, Acetate, Glassine, Foils, Mylar, Folding Cartons, Bags, Lithographed Displays, Printed Promotional Material

General Offices, Milwaukee, Wisconsin
Sales Offices in Principal Cities

This insert printed by Milprint, Inc. *Reg. U. S. Pat. Off.



In the World of Plastics a Star is Born!

MARLEX*

*Called "the greatest advance in plastics since 1939"
MARLEX opens entire new areas of application.*

MARLEX, a revolutionary new family of plastics developed by Phillips Petroleum Company scientists, is opening a new era in plastics and packaging technology. It represents what is probably the most important forward stride in plastics development since the first commercial production of polyethylene in 1939.

MARLEX is a new kind of "polyethylene". . . tougher, stronger and more versatile than any conventional polyethylene now available. Members of the MARLEX family range from an exceptionally rigid, highly crystalline ethylene polymer to more flexible materials of lower crystallinity. MARLEX permits manufacture of stronger products with less material.

The ability of MARLEX to withstand heat, and its superb resistance to penetration by moisture, gases, oils and chemicals provide outstanding protection in plastic packages, bottles, tubes and bags. Under identical test conditions, the tensile strength of MARLEX 50 exceeds 4,500 psi against less than 2,000 psi for a typical present-day polyethylene. It does not soften at temperatures as high as 250° F. It will not become brittle at temperatures as low as 175° F. below zero. The unique MARLEX process provides precise control of quality and uniformity.

MARLEX 50 has been used and evaluated by many leading fabricators who report that it opens the way to new applications in the plastics field, and also will find wide usage in many products now made of other materials. They say it colors, molds and extrudes beautifully.

The huge demand for MARLEX cannot be satisfied at this time. But, with the building of a new plant of over 100 million pounds per year capacity by Phillips Chemical Company, a wholly owned subsidiary of Phillips Petroleum Company, fabricators of plastics will soon have substantial supplies available. MARLEX will later be made by other manufacturers who will be licensed to use the Phillips process.

Today, the biggest thing ahead in plastics is MARLEX. Forward looking manufacturers of plastic products are making their plans accordingly.



PHILLIPS CHEMICAL COMPANY

A Wholly Owned Subsidiary of Phillips Petroleum Company
Bartlesville, Oklahoma

*A Trademark

MARLEX 50

Typical Properties	Value	ASTM Test
Softening Temperature, °F	260 ^a	—
Density	0.96	—
Tensile Strength, psi		
Injection Molded		D638-52T
20 in/min	5100	
0.2 in/min	3500 ^b	
Compression Molded		D412-51T
20 in/min	4200	
0.2 in/min	3100 ^b	
Elongation, %		
Injection Molded		D638-52T
20 in/min	28	
0.2 in/min	518 ^b	
Compression Molded		D412-51T
20 in/min	20	
0.2 in/min	1175 ^b	
Stiffness, psi	140,000	D747-50
Melt Index	0.6	D1238-52T
Impact Strength, Izod (ft lbs/in notch)	3.0	D256-47T
Brittleness Temperature, °F	-180	D746-52T

^aAdapted from method of Karrer, Davis and Dieterich, *Ind. and Eng. Chem. (Anal. Ed.)* 2, 96 (1930).

^bTest specimens did not break when pulled to the limit of the testing machine.

GAS PERMEABILITY Cc x Cm/Sec x Sq Cm x Cm Hg

Gas	MARLEX 50 Film Px 10 ⁹	High Pressure Polyethylene Film Px 10 ⁹
Carbon Dioxide	0.214	1.22
Hydrogen	0.199	0.794
Oxygen	0.069	0.276
Helium	0.153	0.540
Ethane	0.146	1.23
Natural Gas	0.070	0.343

LIQUID PERMEABILITY Gms/100 sq in/mil/24 hrs

Liquid	MARLEX 50 Film	High Pressure Polyethylene Film
Toluene	59.3	390
Carbon Tetrachloride	52.0	384
n-Heptane	34.8	257
Ethyl Acetate	3.3	30.8
Amyl Acetate	1.1	5.6
Acetone	0.8	7.4
Methyl Salicylate	0.9	6.9
Ethanol	0.1	0.9

MOISTURE VAPOR TRANSMISSION Gms/100 sq in/mil/24 hrs ASTM D697-42T (Method A at 100° F)

MVT	MARLEX 50 Film	High Pressure Polyethylene Film
	0.3	1.3

**how to make
a bleached
food board
both**

TOUGH

and gentle.

Crossett's new bleached food board mill, now nearing completion, will be equipped to produce a truly unique packaging board—the result of a revolutionary pulping process.

Gentle, neutral, semi-chemical hardwood pulp is blended with tough long fibre pine pulp on a modern high speed cylinder machine. This provides a super-white smooth surface with just the proper degree of ink receptivity, backed up by muscles of Arkansas pine.

Instead of the homogenous compromise of pulps used in the majority of food boards today, we can place the hardwood and soft wood pulps in any position desired, thus tailoring the board to your own specifications.

We would like to tell you more about this unique board and how you can build for the future with our totally independent and dependable bleached board mill.

CROSSETT

A DIVISION OF



PAPER MILLS

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1816 First National Bank Bldg.

News about

B. F. Goodrich Chemical materials



**BEFORE YOU
"WRAP IT UP"...**

think of **GEON**

YOU wrap up exceptional sales appeal when you put Geon polyvinyl materials into your packaging. Coatings, binders, sizes, and impregnants based on Geon are being used in an increasing variety of profit-producing packages.

Geon Latices . . . water dispersions of Geon resins . . . applied by conventional methods on existing equipment . . . present no toxicity, fire, or solvent problems.

Geon latices provide glossy, washable surfaces with good feel, excellent printability, and light stability. Geon latex coated materials are greaseproof, have low moisture vapor transmission rates, find application in food packaging. Geon latices are also used as fiber and pigment binders, and in ink and

paint formulations for packaging.

Plastisols based on Geon . . . can be applied on conventional coating equipment . . . contain no volatiles . . . need no milling or grinding.

Plastisol coatings make packaging materials stronger, more resistant to moisture, oils, abrasion, aging, and chemical attack . . . are particularly adaptable where heavy coatings are required.

Organosols made from Geon . . . solvent resin solutions, simply prepared by stirring resins into the solvent . . . form continuous films upon drying.

Geon organosol coatings provide exceptional transparency and gloss, have low rate (under 1 gm/mil) of moisture vapor transmission, offer high strength, excellent light stability, high resistance to puncture and


abrasion.

Geon materials add saleability to drums, multi-wall bags, folding and set-up boxes, wraps, labels, tapes, and liners. For information that can add sales sparkle to your own products, please write Dept. BQ-4, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.



GEON RESINS • GOOD-RITE PLASTICIZERS . . . the ideal team to make products easier, better and more saleable.

GEON polyvinyl materials • **HYCAR** American rubber and latex • **GOOD-RITE** chemicals and plasticizers • **HARMON** colors



We have very long experience in flour packaging and continuously developed new and faster machinery from 1—5 lbs., in double and single bags or cartons, from roll, sheet or preformed container.

**Individual filling,
bundling and
combined printing**

is possible.

**Maschinenfabrik Aktiengesellschaft
Stuttgart-Bad Cannstatt, Germany**

represented in U.S.A. by:

GEVEKE & CO. INC.
25 Broadway
New York 4, N.Y.

in Canada by:

PACKAGING EQUIPMENT SERVICE LTD.
124 Willowdale Street
Willowdale/Ontario

027/55

JULY 1955

NOW

packaging accuracy at high speed

STOKESWRAP[®]

with

NET WEIGHT SCALES

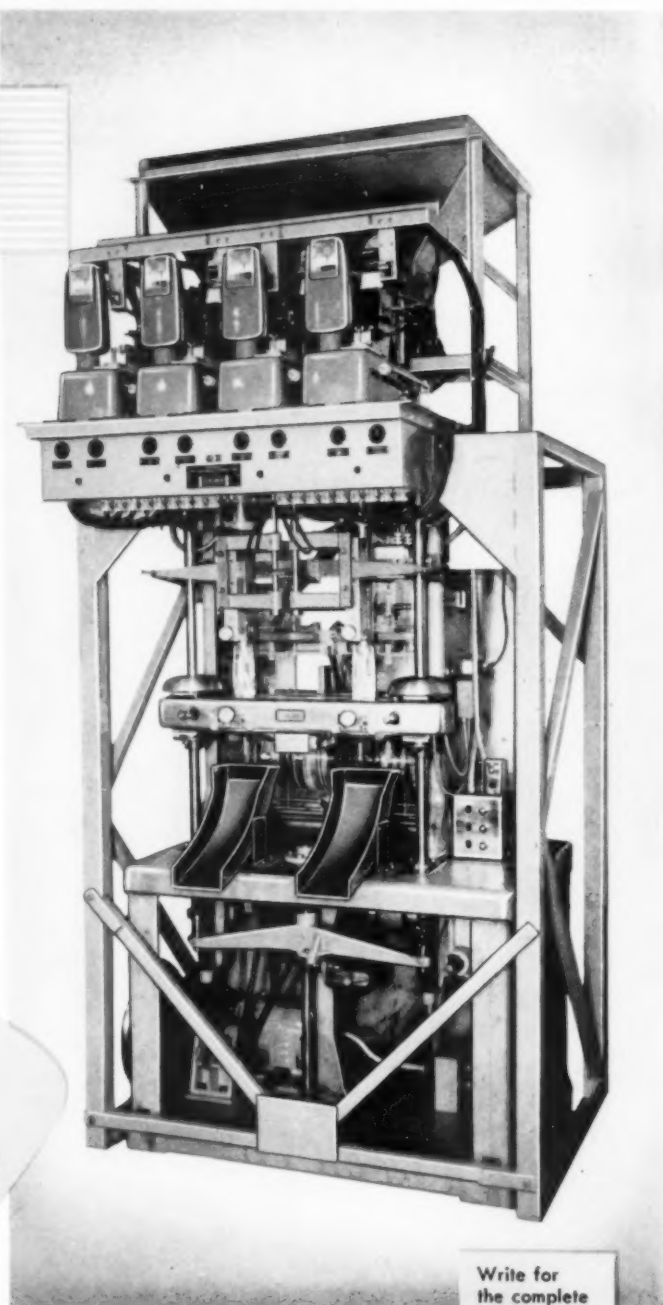
STOKESWRAP with Net Weight Scales brings you automatic packaging plus accuracy and high speed. Up to 60 packages can be filled per minute through the use of multiple scales.

A special vibrating device feeds the bulk of the product from hopper into the weighing bucket. The exact weight is then accurately measured by dribble feed.

SCALES WILL NOT DUMP UNLESS PROPER WEIGHT IS REACHED. The scale range is one ounce to one pound.

The STOKESWRAP forms, fills, and heat seals using any approved film, paper or foil; plain or printed. Package limits range from a maximum of 5 $\frac{1}{16}$ " wide and 12 $\frac{1}{2}$ " long to a minimum of $\frac{13}{16}$ " wide and 1" long.

**For accurate
packaging of free flowing
and mixed materials not suitable
for volume filling**



Your present STOKESWRAP can be equipped with these specially designed Net Weight Scales.

Write for
the complete
STOKESWRAP
story.



STOKES & SMITH CO.

4904-U SUMMERDALE AVE., PHILADELPHIA 24, PA.

Pacific Coast: SIMPLEX PACKAGING MACHINERY, INC., 534 - 23rd AVE., OAKLAND 6, CALIF.



SUBSIDIARY OF FOOD MACHINERY AND CHEMICAL CORPORATION

TRADE MARK



Instant Breakfasts by the **Pouchful**



protected by

Package made of
pouch materials
produced by
Riegel Paper Corp.,
New York 16, N. Y.

Pancake flour in portion packs... That's how restaurants and lunch counters are stepping up service with powdered foods that are factory-fresh.

BAKELITE Brand Polyethylene is an important ingredient in packaging these products. It coats the inner side of the special glassine pouches, gives them a fast, tight heat-seal despite dusty contents. Tough and flexible, it increases wall strength. Moisture-resistant, it keeps powders dry. Tasteless and odorless, it won't affect flavor or aroma.

Wherever you see BAKELITE Poly-

Vinyl, Polyethylene, Polystyrene, Phenolic, and Epoxy Resins for Packaging

ethylene used, you'll find a packaging improvement. It increases toughness, strength and gloss when added to wrapper waxes. It's formed into film that's fabricated into strong, tear-resistant, transparent bags for fruit and vegetables. It's molded into squeeze bottles that won't break if dropped, and whose light weight cuts shipping costs.

Find out whether your package can be improved. You can learn more about BAKELITE Polyethylene by writing Dept. HR-105.



BAKELITE COMPANY, A Division of Union Carbide and Carbon Corporation UCC 30 East 42nd Street, New York 17, N. Y.
The term BAKELITE and the Trefoil Symbol are registered trade-marks of UCC

Here's
how a sales
problem got
the brush-off
with **Krene**
Cast Vinyl
Film

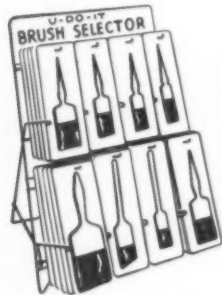


How to let customers see and feel the quality of the business end of a paint brush without risking "shopwear"—that's the problem Gerts Lumbar & Co., set out to lick. With KRENE Cast Vinyl Film they not only solved it, they added other advantages.

"Our goal is the best point-of-sale appeal and protection we can get. Undisplayed brushes are poor sellers. Unprotected brushes are candidates for markdowns.

"Being tough, KRENE Cast Vinyl Film is dependable. It strongly resists tearing or cracking. But the real key is its clarity and flexibility. The customer doesn't pull off the cast vinyl wrapper (as he did with other wrappers). He can see the fineness and length of bristle. He can feel the flexibility without removing the wrapper. And the sparkle of the film maintains quality appearance.

"Retailers report increased sales, savings in time consumed per sale, and greatly reduced loss from damage by careless, curious hands. As an added benefit for the consumer, the wrapper of KRENE makes a handy storage wrap after using."



WHAT ABOUT
YOUR PROBLEM?

KRENE Cast Vinyl Film offers intriguing benefits... especially for packaged foods, hardware, soft-goods, and many other products. It's different from other flexible films. Its unusual strength combined with remarkable clarity and gloss is unique. It is highly chemical resistant, easily heat-sealed, easily fabricated by many methods, and offers attractive advantages in economy. Why not investigate today? For samples and an informative booklet write Dept. JC-105.



INVESTIGATE
BAKELITE®

Krene®
Cast Vinyl Film & Sheeting

@UCC

BAKELITE COMPANY, A Division of Union Carbide and Carbon Corporation UCC 30 East 42nd Street, New York 17, N. Y.

*crammed full of goodness...
making sales records everywhere...*

*these
nationwide
favorites...*

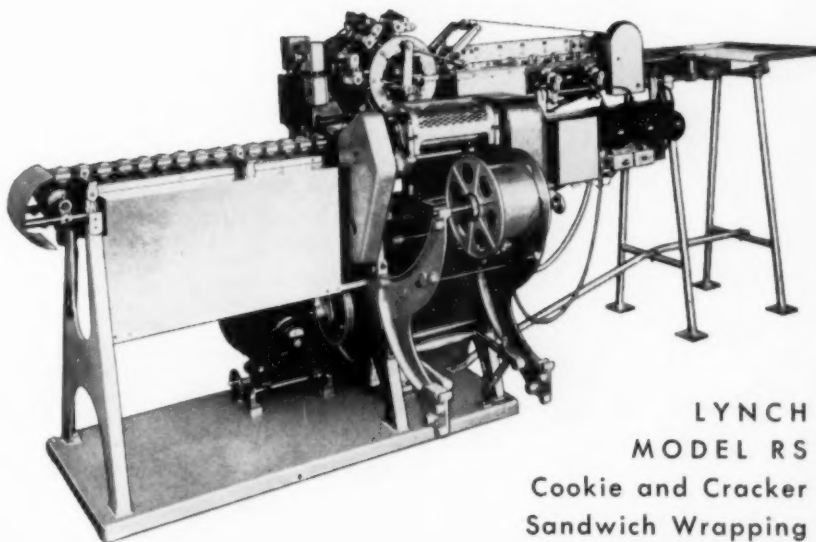


*...deserve (and get!)
faster, more economical*
Lynch Packaging

The attractively packaged cookie and cracker sandwiches pictured above, prominently displayed at point of purchase, create volume impulse sales every day. Sales stimulating packaging, preserving flavor and freshness, is efficiently, economically accomplished by the Lynch Model RS. For complete information about profitable packaging with the Model RS, write, phone or wire today! Dept. M.

**LYNCH
CORPORATION**

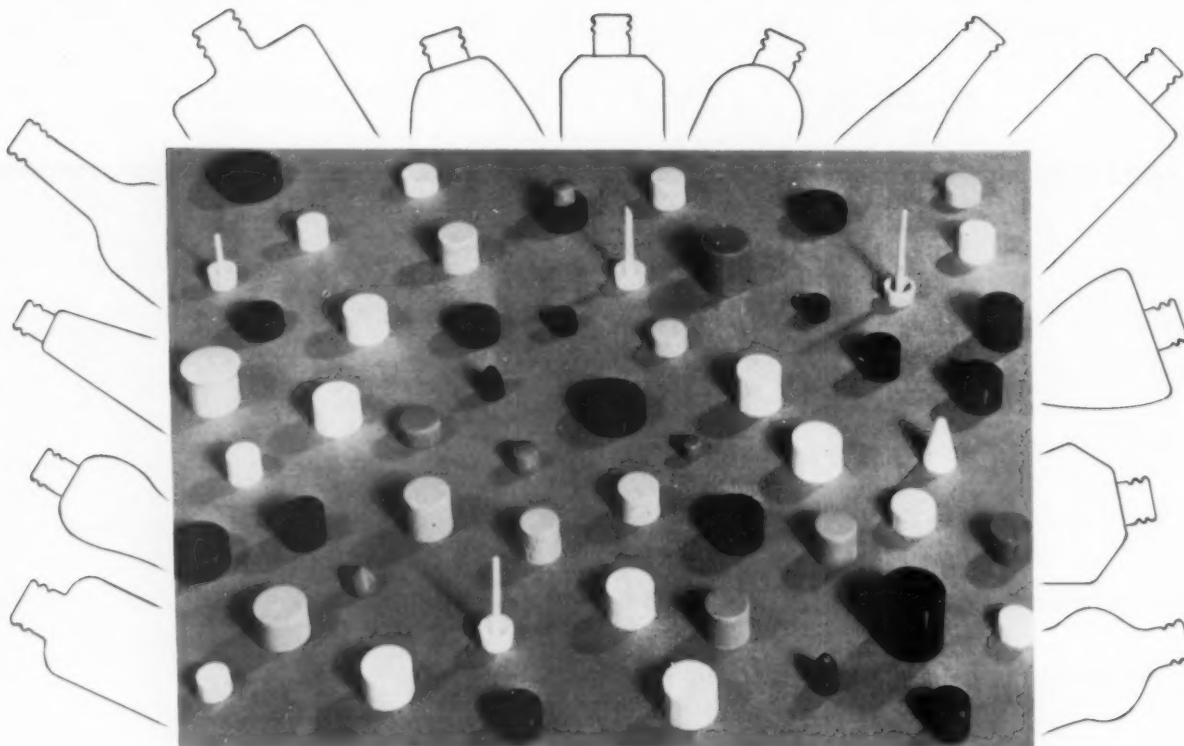
PACKAGING MACHINES



**LYNCH
MODEL RS**
Cookie and Cracker
Sandwich Wrapping
Machine

ANDERSON, INDIANA

Branches—New York • Toledo • Chicago • San Francisco
Los Angeles • Atlanta • Dallas • Toronto
Export Dept.: 13 East 40th St., New York 16, N. Y.



Close Your Bottles Practically, Beautifully With Molded Caps by WHEELING

To give your bottled products the customer-appealing appearance they deserve, seal them with *Molded Caps by Wheeling*. *Wheeling* designers are style-wise, with a unique flair for the modern sales-stimulating approach; they are practical, too, considering fully the end use factors of the product involved. They are skilled equally in the adaptation of hard phenolic plastics as in soft, pliable polyethylene. And when there is a marketing deadline, you'll really appreciate the facility of *Wheeling* design and delivery service.

Make a note now to get a *Wheeling* design and cost estimate on your next *Molded Cap* requirements; you'll be pleased with the result.

W H E E L I N G

WHEELING



S T A M P I N G C O.

WEST VIRGINIA

Aluminum, Tin and Lead Collapsible Tubes—Molded Tube and Bottle Caps—Plastic Specialties

Consult Your Classified Phone Directory for Sales and Service in These Leading Cities:
New York — Boston — Philadelphia — Chicago — Cleveland — Cincinnati — St. Louis — St. Paul — Los Angeles

General
Chemical
Presents



The Amazing Story of Aerosols

...See This Dramatic Full-Color Sound-Slide
Film in Your Own Office or Plant

Here is the complete story of aerosols and the growth of a great new American industry dramatically told in full color on sound-slide film. It's available free of charge for showing in your own office or plant.

"Push-Button Living" covers the development of aerosols from the first "bug bomb" to today's production of nearly 200,000,000 units covering 85 different types of self-spray products.

Your company's top management, research personnel, production heads—in fact, everyone interested in making or marketing aerosols—all will want to see this fact-filled film. Step by step it covers fully what aerosols are, how they are made and work. And, it shows how competent contract fillers make it possible for your company to enter this fast-growing field without investment in plant or equipment.

For Free Showing of "Push-Button Living" at your office or plant, just call the General Chemical office that serves you, or send coupon today.

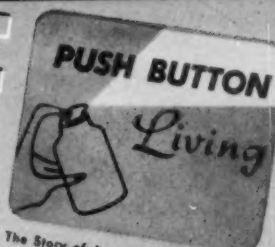
GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

Producers of

genetron[®]
PROPELLANTS

... the right propellant for every aerosol need.



The Story of Aerosols and the Growth
of a Great, New Industry



Aerosols Popularity in the Home



Heart of the Aerosol—
"Genetron" Propellants



The Role of the Contract Filler



The Continuous Search for New
and Better Products



Allied
Chemical

"Genetron" Department GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

MC-7

Without cost or obligation to us, we would like a showing of the new General Chemical film, "Push-Button Living—The Story of Aerosols and the Growth of a Great, New Industry," at our

_____ office _____ plant.

Name _____ Position _____

Company _____

Address _____

City _____ Zone _____ State _____

Give me some before the kids eat 'em all!



Yes, sir! *You've got to get your share of Reeveselect Giant Olives while you can. These big, plump beauties disappear like magic every time they are brought out of the picnic basket . . . or put on the table at home.*

These Reeves products are sealed with Crown Screw Caps and liners scientifically selected for the individual product. This is the way a great many of America's leading packers are protecting their products today. And the fact that the number of Crown Closure users continues to grow, shows that these caps have the features that satisfy packers' requirements. Why not ask your Crown Closure Representative to bring you up-to-date on these caps? Call him right now there's no better time. Crown Cork & Seal Company, Inc., Closure Sales, Baltimore 3, Maryland.
World's Largest Maker of Metal Closures.



REEVESELECT Giant Olives, Colossal Olives, Stuffed Olives, Cherries and Onions are packed by B. M. Reeves Co., Inc., New York and Chicago.



Approved by millions of housewives

PRODUCT IMPACT

AND



IDENTIFICATION...

CHAMPION PAPER



WITH

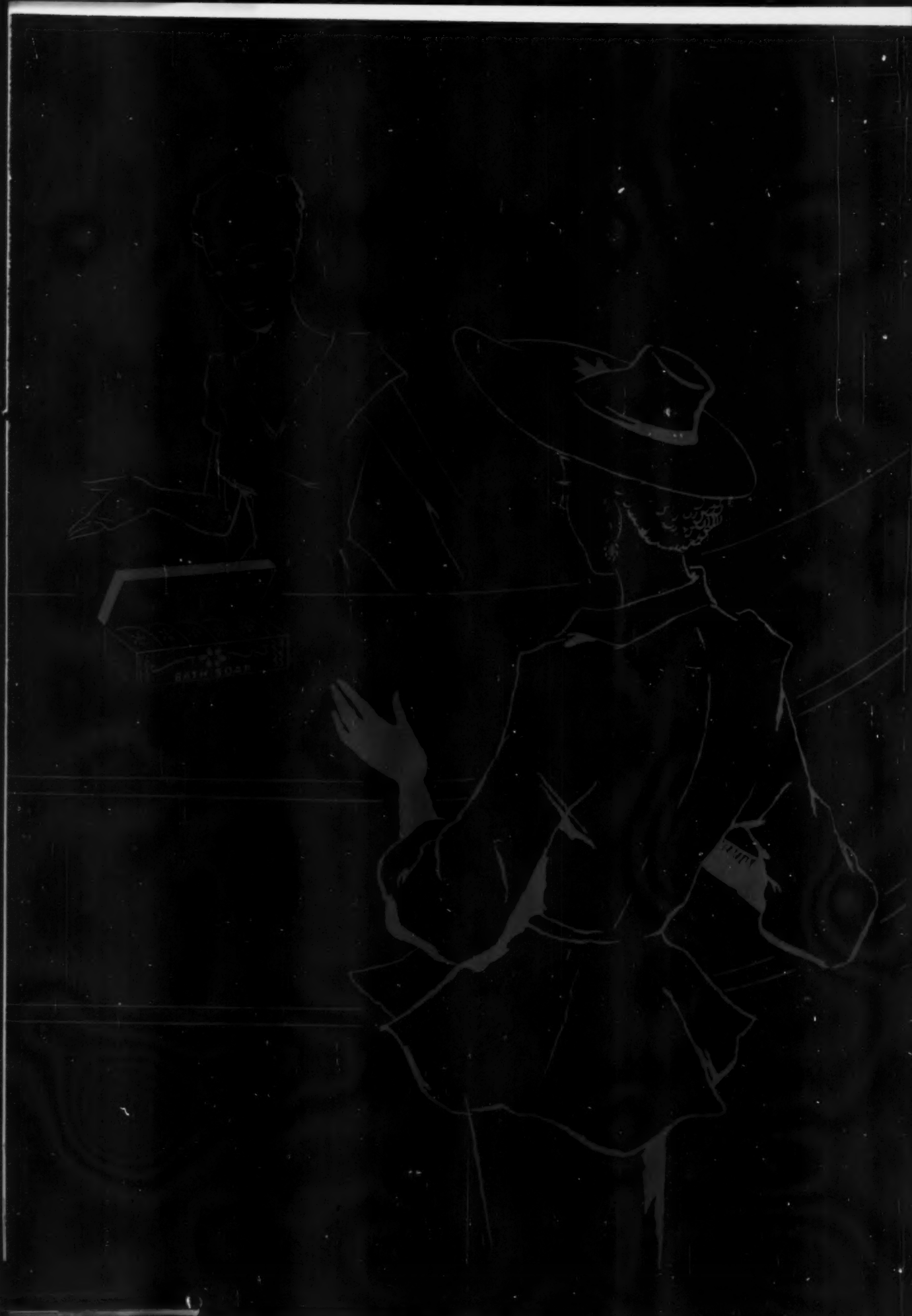
Colorcast

DRUM FINISHED

Label and Box Wrap

Made only by The Champion Paper and Fibre Company • Hamilton, Ohio





CHAMPION PAPER



Keep YOUR Products Moving

For labels or matching box wraps the clear, brilliant, fast-to-light colors of Colomast Dremi-Finished paper will give you identification for your product line as well as the impact you need for modern selling.

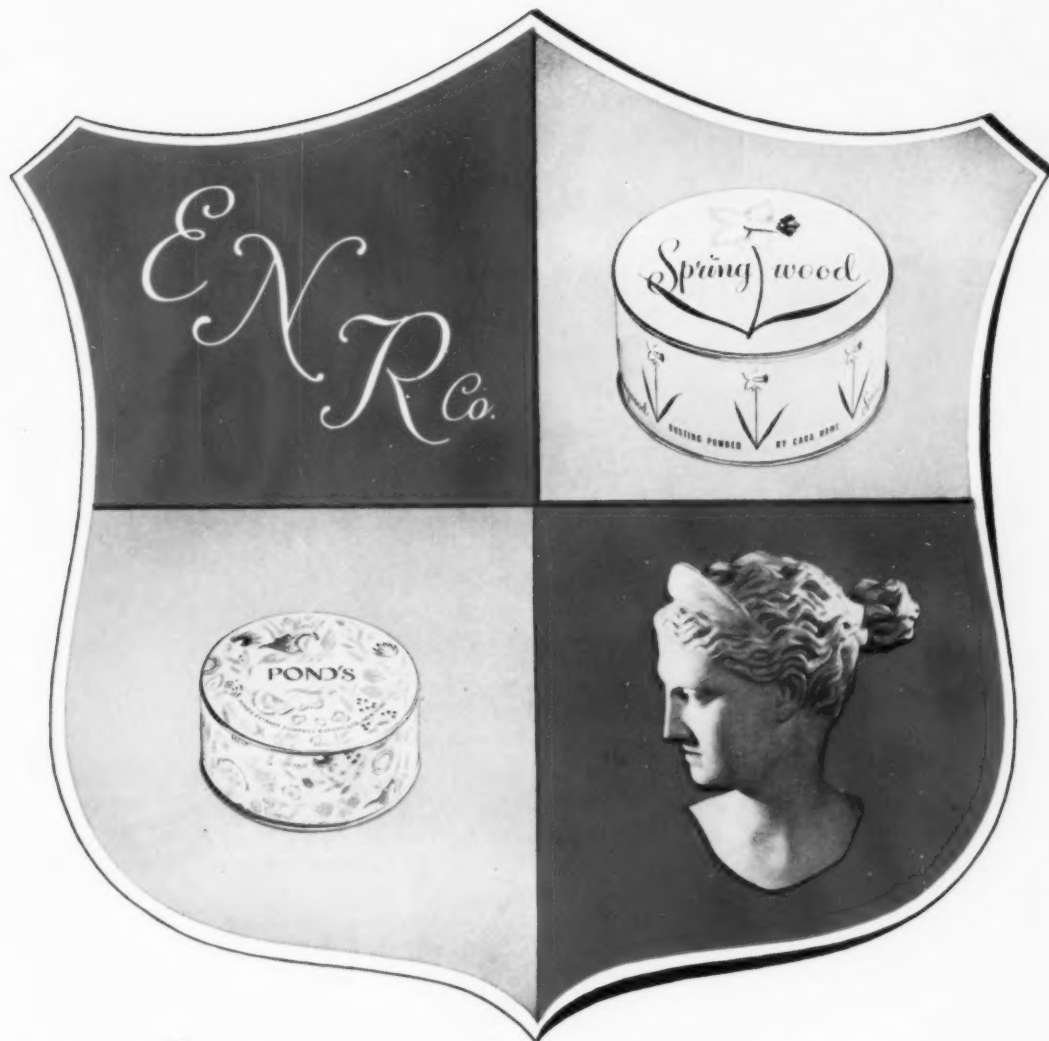
Available in White, Christmas Red, Christmas Green, Canary Yellow, Patent Leather Black, and Royal Blue. Sample swatch on request to our Advertising Dept.

Colomast

is manufactured by

THE CHAMPION PAPER AND FIBRE COMPANY

General Office: HAMILTON, OHIO



For Quality that's Traditional

.... ROWELL BOXES

Round and square set-up boxes

...the finest materials and construction

Manufacturers of Fine Paper Boxes



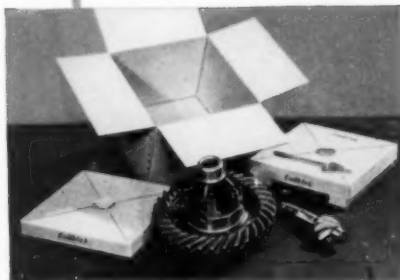


*** This powerful sales factor is as important to you today as the fast and secure closing characteristics of our closures . . .**

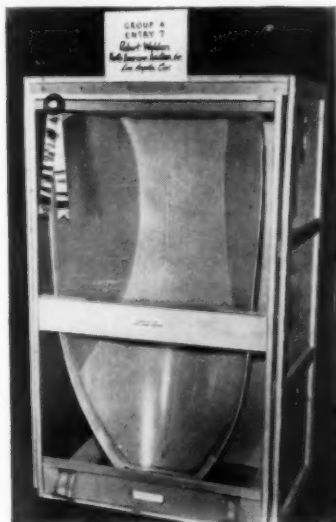
May we help you observe these three characteristics on your own lines?
Bernardin Bottle Cap Co., Inc.,
Evansville, Indiana



Celotex prize-winning packs show how you can cut packaging costs!



Gear is block-packed in this prize-winning pack with 80% reduction in packaging time. Note cut-out for trap-positioning of pinion gear.



Another prize-winning pack: Design prevents "cold flow" of aircraft cockpit enclosure by securely "trapping" all edges in prefabricated contours of Celotex packs.



Grand Prize-winning pack shows prefabricated Celotex Fiber Board inner packs contoured to exact lines of aircraft brake surfaces for snug, immobile fit.

Winners in SIPMHE Shows made with Celotex Neutral pH Industrial Board

This "Best of the Show" pack, the Grand Prize winner itself . . . plus these two division prize winners — all users of engineered, prefabricated inner packs of Celotex Industrial Neutral pH Fiber Board!

No wonder they won top awards at the SIPMHE Packaging Shows: These packs were designed for packaging and shipping of valuable contents with minimum weight and cost and in maximum safety. And no better way could be found

than with Celotex Fiber Board inner packs, which . . .

- Brace, Block, Cushion!
- Lower Packaging Costs!
- Prevent Damage!

Does your operation include domestic or overseas shipment of difficult-to-pack, expensive, irregularly-shaped equipment or parts? Are packaging costs or damage in handling cutting into your profits? Celotex Fiber Board inner packs could very well be your solution.

Precision Fabricated as Required

Manufactured from long, tough interlocked Louisiana cane fibers, the strong Celotex board from which inner packs are made is extremely light and resilient. Because it can be prefabricated to exacting product contours, it tightly braces, position-blocks, and cushions with gentle firmness, preventing movement and impact damage. Its rigidity, strength, and cushioning not only provide optimum protection but often make the use of lighter, less costly outer containers completely practical.

Outstanding physical characteristics of strong yet lightweight Celotex Fiber

Board: Has a neutral pH value (6.5-7.5); this low acid-alkali content is helpful in minimizing corrosion when in contact with metals. Moisture content is between 5% and 8% by weight, far less than most inner pack materials, requiring less costly desiccant.

Locally engineered prefabricated Celotex Industrial Cane Fiber Board inner packs can help solve your problems of limited packing time and shipping space . . . can substantially reduce your labor and damage costs. Name of your nearest servicing fabricator on request. For full data, mail handy coupon today!

For proven packaging at its quick best . . .

CELOTEX
REG. U.S. PAT. OFF.
INDUSTRIAL CANE FIBER BOARD
THE CELOTEX CORPORATION • 120 SOUTH LASALLE STREET
CHICAGO 3, ILLINOIS

MAIL COUPON NOW FOR FREE BOOKLET!

The Celotex Corporation, Industrial Dept. MP-75
120 South LaSalle Street, Chicago 3, Illinois

- ☐ Please send me your free booklet, "Cost-Saving Packaging."
☐ Please furnish me a copy of the Celotex cushioning nomogram.

Name _____ Position _____
Company _____ Address _____
City _____ Zone _____ State _____

FOR THOSE WHO WANT TO GET AWAY FROM ANNOYING PROBLEMS



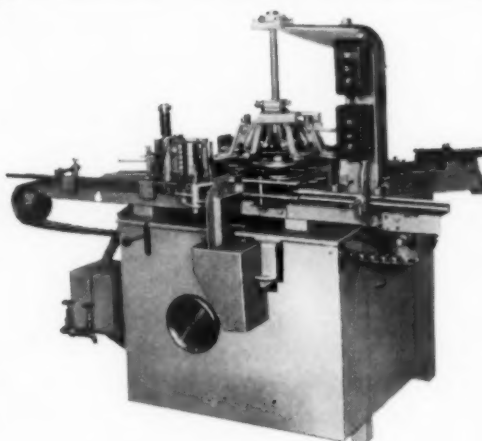
STEP UP YOUR LABELING...with the **PONY EXPRESS®**

STEP UP from HAND-FEED LABELING

If you use a semi-automatic labeler now for the sake of flexibility, change to fully automatic on the PONY EXPRESS and have the same flexibility, plus 50% more production, without the cost of a full-time operator.

STEP UP from an 'automatic' that is not FULLY automatic

No machine is "fully automatic" unless it does uniform work without the cost of extra labor to inspect the labeling job, reposition the label, wipe off glue smears, or press down the corners of the label. It is "semi-automatic" if you need someone to complete the machine's job.



**SUCTION LABEL HANDLING
MICRO GLUE CONTROL
CAPACITY UP TO 70/MINUTE
25 MINUTE CHANGE-OVER
NO OPERATOR**

The PONY EXPRESS utilizes suction to handle labels, not glue! The PULL of the label out of the hopper and the HOLD of the label while it is being transported to the container are obtained by the use of SUCTION, rather than expecting the glue to provide these mechanical functions.

550

Less demand as to the limits within which the glue consistency must be maintained, plus the micro glue-control that prevents applying an excessive amount of glue to the label, guarantees clean results and precise label registration with which to achieve the desirable maximum display appeal.

Ask for details — or a demonstration . . .

NEW JERSEY MACHINE Corporation

AUTOMATIC LABELING • PACKAGING



PAPER BOX MACHINERY • MAKERS OF THE PONY LABELRITE

FACTORY SALES AND SERVICE BRANCHES
325 W. HURON ST., CHICAGO 10, ILL.
1701 CAREW TOWER, CINCINNATI 2, OHIO
2500 W. 6TH ST., LOS ANGELES 5, CAL.

MAIN OFFICE & FACTORY: 1510 WILLOW AVENUE, HOBOKEN, N. J.

PRODUCT NEWS FROM **Pfizer**

non-toxic
plasticizer
for food
packaging...

now
odor
free!

PFIZER CITROFLEX^{*} A-4 (Acetyl Tributyl Citrate)

An important development from Pfizer for better, safer, easier to sell plastic food wraps! It's new, *odor-free* PFIZER CITROFLEX A-4 (Acetyl Tributyl Citrate). Accepted for use in food wrappings by the Food and Drug Administration, this Pfizer Citroflex plasticizer is especially recommended for a wide list of applications where toxicity and odors are a problem. Examples: *in polyvinyl chloride films* used for packaging frozen and processed meats, poultry, baked goods, candy; *in polyvinyl chloride coatings* for cartons containing milk, cream, ice cream, cheese; and for such applications as anatomical restorations, hospital sheeting, blood plasma tubing and beverage tubing. For information and samples, mail the coupon below.

Tank Car price .33 per lb. freight allowed. Slightly higher west of Denver.

ALSO IN THE PFIZER CITROFLEX LINE

CITROFLEX A-2 (Acetyl Triethyl Citrate)

CITROFLEX 2 (Triethyl Citrate)

CITROFLEX 4 (Tributyl Citrate)

CITROFLEX A-8 (Acetyl Tri-2-Ethylhexyl Citrate)

Chas. Pfizer & Co., Inc.,
Chemical Sales Division
630 Flushing Ave.,
Brooklyn 6, N. Y.

- ☐ Please send me
Technical Bulletin 31 A
- ☐ Please send me a sample
of Pfizer Citroflex A-4

Name _____

Title _____

Company _____

Street _____

City _____ Zone _____ State _____

MP _____

^{*}Trade Mark, Chas. Pfizer & Co., Inc.

Manufacturing Chemists for Over 100 Years

Pfizer

CHAS. PFIZER & CO., INC.
Chemical Sales Division

630 Flushing Ave., Brooklyn 6, N. Y.
Branch Offices: Chicago, Ill.; San Francisco, Calif.;
Vernon, Calif.; Atlanta, Ga.



Door Opening Made Easier...

***By Ridgelo coated boxboards for every purpose
...for enhancing the appeal of every package!***

America's doors are always open . . . to products that are made right, priced right, and packaged right. The independent converter seeking to assure his customers the best possible cartons—in any grade, finish, or price range of clay-coated boxboard—has the best of allies in Ridgelo. An independent like himself, this mill provides the converter with a wide selection of standard stocks . . . *plus* custom-made ones to precisely fill any unusual requirements. *All* of them are outstanding values . . . with highly superior whiteness, gloss, smoothness, brilliance and other basic qualities.

Interesting samples are yours — free for the asking!

- STANDARD COATED
(machine)
- CUSTOM COATED
 - #75 SINGLE BRUSHED
 - #85 DOUBLE BRUSHED
 - #90 ULTRAGLOSS (glazed)
- POLYETHYLENE COATED

MADE AT RIDGEFIELD, N. J. BY LOWE PAPER COMPANY

REPRESENTATIVES • Detroit — H. B. Royce • Philadelphia — Philip Rudolph & Son, Inc. • St. Louis — A. E. Kellogg • Los Angeles — Norman A. Buist

SecuRO

THE NEW R.O. TAMPERPROOF SEAL

★ SECURO SEAL
BEFORE
FIXING



★ SECURO SEAL
FIXED & PILFER-
PROOF...READY
FOR TRANSIT



UNIQUE DESIGN OF SECURITY BAND BRINGS ADDITIONAL ADVANTAGES

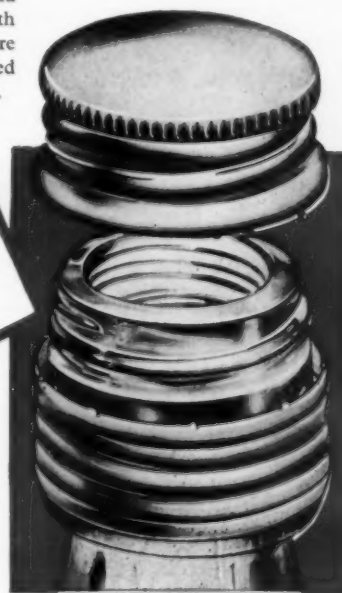
Hundreds of firms have proved the effectiveness of the R.O. Pilferproof Bottle Closure, and now here is the SecuRO Seal to give even greater security as well as the following advantages.

- 1 The SecuRO Seal has a right-hand thread and the Security Band a left hand thread making it easy to break the perforated portion.
- 2 The Security Band can be readily unscrewed and disposed of without cutting.
- 3 The SecuRO Seal is 100% tamperproof.
- 4 The SecuRO Seal has a greatly enhanced appearance. The SecuRO Seal can be applied by any R.O. Sealing Machine suitably adapted. A small change in the glass finish will be necessary but this can easily be effected.

The tell-tale 'click'. When the SecuRO Seal is unscrewed, cap and Security Band part company with an unmistakable 'click' to assure the customer that he has received the contents intact and undiluted.

★ SECURO SEAL BROKEN
BY THE CONSUMER

But instead of Band dropping down neck of bottle, it remains on thread and may be removed by unscrewing!



METAL CLOSURES LTD

WEST BROMWICH · STAFFORDSHIRE · ENGLAND

LONDON OFFICE: 40 BROOK STREET, LONDON, W.1

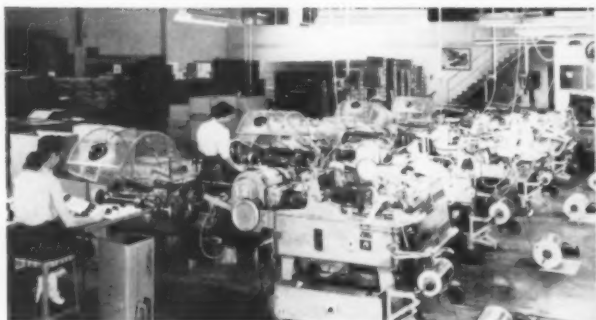


Spacious plant of Modern Packages provides every facility for high quality flexible packaging.

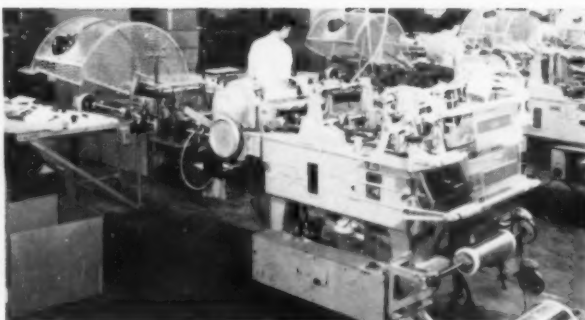
Automatic bag fabrication section of Plant where rigid inspection standards are maintained.



300,000 POLY BAGS DAILY ON 3 SHIFT OPERATION AT MODERN PACKAGES, INC.



Battery of four high speed Simplex Model 4-7 Polyethylene Bag Making Machines operate 'round-the-clock.

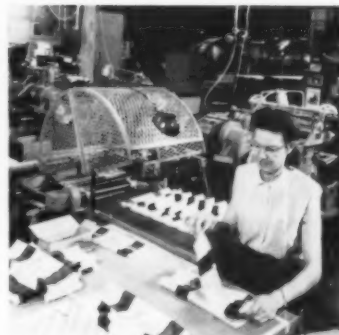


Close-up view of one of Simplex (4-7) Bag Making units capable of handling light to heavy mil Polyethylene film.

"We've cut in-plant waste to less than 2% in Polyethylene bag making with practically no rejects," says O. D. Carlson, President, Modern Packages, Inc., Los Angeles, California

"Our labor costs are low too. A minimum of direct labor is required to operate all four Simplex machines. Except for maintaining rigidly high inspection standards two girls could easily handle the output of 100,000 bags per shift. We also have found that we are able to obtain new high standards of uniform bag quality with these machines. Without too heavy an investment in equipment we can schedule our production to run bags for several customers at the same time. It certainly takes very little training or experience to install or operate these automatic units. In fact we set up the machines and were running at full capacity in just a few hours after they arrived at our plant."

Modern Packages is just one of many leading converters who are turning out real production of quality bags at low cost with Simplex Model 4-7 Polyethylene Bag Making Machines.



Automatic staker and counter simplifies inspection and packing of high quality Poly bags.

Simplex

SIMPLEX PACKAGING MACHINERY, INC.

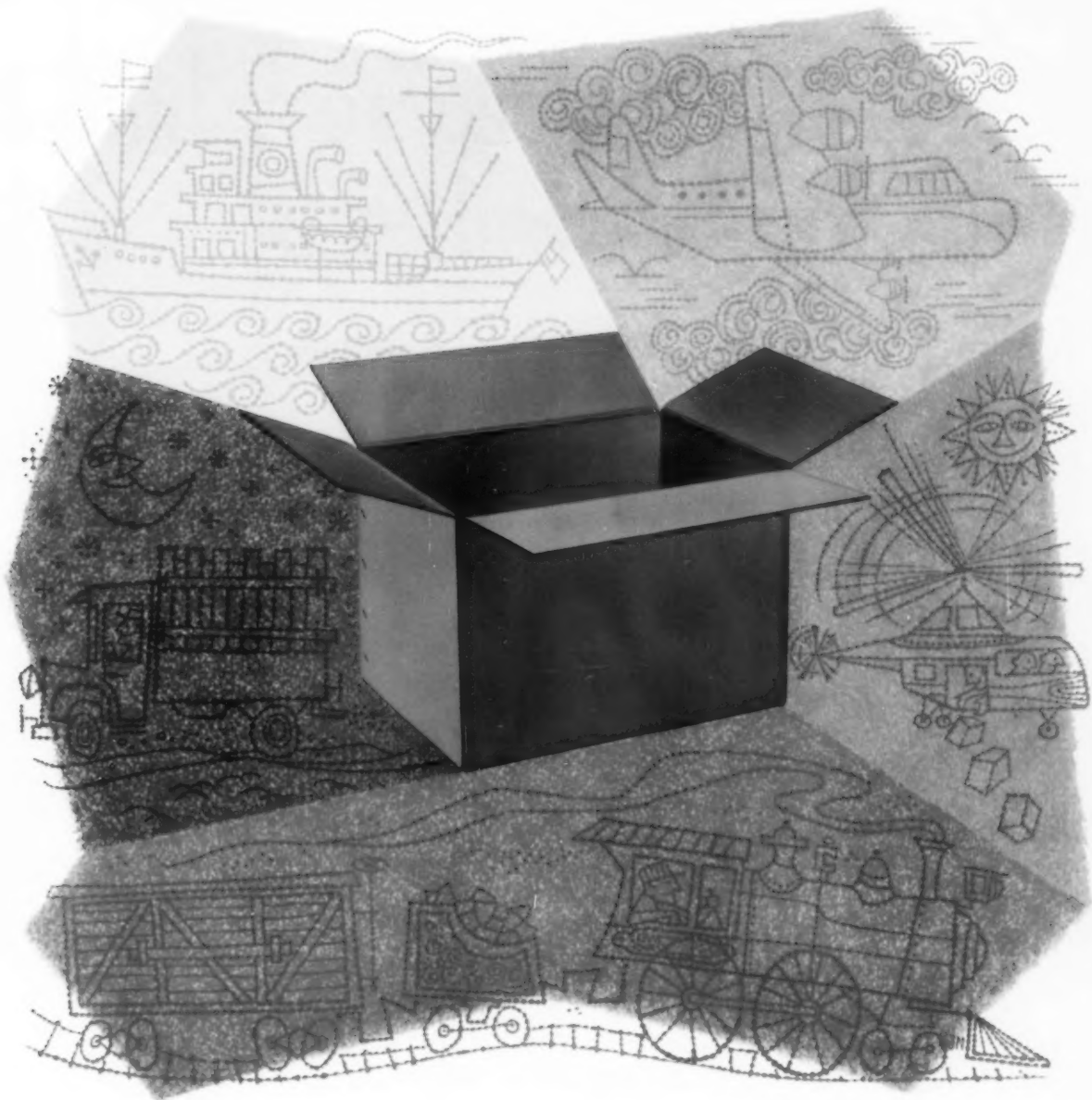
534 23rd AVENUE, OAKLAND 6, CALIFORNIA

Foreign Sales: FMC Export Dept., P.O. Box 760, San Jose 6, Calif.

(Cable Address: FOODMACHIN)



SUBSIDIARY OF FOOD MACHINERY AND CHEMICAL CORPORATION



FIBREBOARD CREATES*

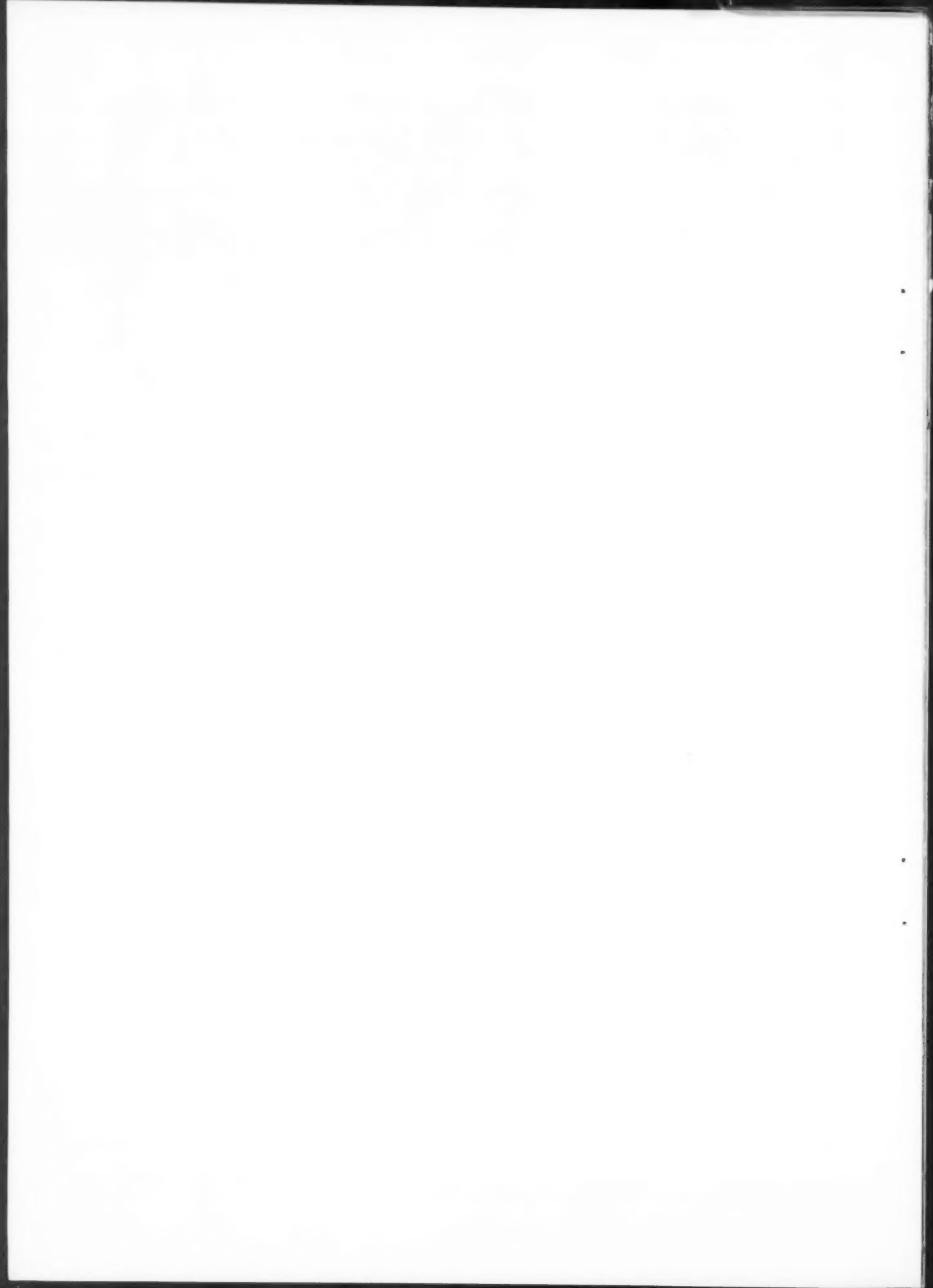
shipping cases that carry your product safely.

*Any size, stock or made-to-order, plain or printed. Call our nearest office for personal service.



FIBREBOARD PRODUCTS INC. Head Office: San Francisco 11, California
Fibreboard Products (Eastern Division) Inc., Philadelphia and Baltimore

SALES OFFICES—West: Billings • Boise • Denver • Fresno • Los Angeles • Oakland • Phoenix • Portland • Sacramento • Salem • Salinas • Salt Lake City
San Diego • San Francisco • San Jose • Seattle • Stockton • Yakima • East: Baltimore • Chicago • Easton • Lancaster • New York • Philadelphia • Reading



Could your package use these advantages?



☆ HIGH TENSILE STRENGTH

☆ SUPERIOR CLARITY

☆ EXCEPTIONAL RESISTANCE TO SUNLIGHT –
EXCELLENT AGING QUALITIES

☆ OUTSTANDING TEAR-RESISTANCE –
PERMITTING ALMOST LIMITLESS HANDLING
WITHOUT DANGER OF BREAKAGE

☆ HEAT-SEALABILITY WITHIN A WIDE RANGE
OF TEMPERATURES – A PLASTIC FILM
THAT HEAT-SEALS ON CURRENT
COMMERCIAL OVERWRAP EQUIPMENT

If the answer is yes to any of these, it'll pay you to investigate VITAFILM – latest packaging advance of the Goodyear Film Development Laboratories.

VITAFILM is now being successfully used on automatic overwrap equipment by many manu-

facturers of sheets, pillow cases and other textile products.

For further information, for help in adapting VITAFILM to your product, write the Goodyear Packaging Engineer, Goodyear, Packaging Films Dept. G-6418, Akron 16, Ohio.

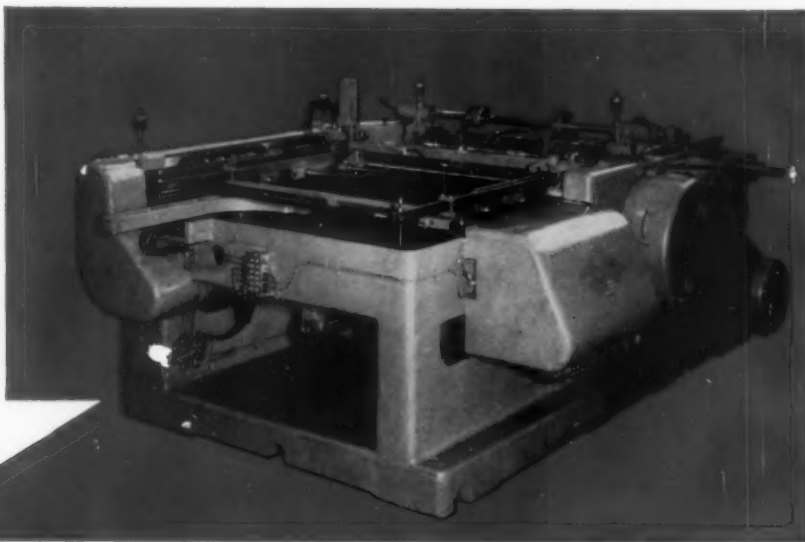
Vitafilm a new



Vitafilm, a Polyvinyl chloride—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

*If you want lower cost body blanks,
join the swing to this modern*

HAMILTON 401 DUPLEX SLITTER



Here's one of the "hottest" new machines in Hamilton's complete line of modern, high-speed can-making machinery. And we're not a bit surprised that it has been such a "smash-hit" . . . ● The big demand for our 401 Duplex Gang Trimmer and Slitter confirms our belief that a faster, better slitter is needed to permit increased can production. ● This Hamilton 401 Slitter is so very advanced that it has made obsolete other slitters as new as five years old. Here are four specific reasons why it'll pay you to switch to our modern 401:

1. Its *streamlined*, simplified design provides maximum accessibility and easy adjustments.
2. *Sturdier*, more rigid construction means far less downtime. Both units are mounted solidly on a massive, heavily reinforced base to prevent distortion and misalignment.
3. It's about *40% faster* than other "new" slitters and easily meets the need for higher production rates.
4. *Greater accuracy* is assured by its ruggedness and precise gauging. It exactly duplicates litho press gauges. It'll cut your rejects and improve your product quality.

For further facts about the 401 Slitter or other machines in Hamilton's complete line of equipment required for making all kinds of cans, please write to:

Hamilton Division, Hamilton, Ohio



BALDWIN-LIMA-HAMILTON



ABOVE—Transparent containers by J. E. Plastics Mfg. Corp., New York.

LEFT—Pressure-formed packaging by Plastic Artisans Inc., White Plains, N. Y.

there's nothing quite like acetate for Sparkling showmanship

There's nothing quite like transparent, rigid containers of sparkling Celanese* Acetate when you want to attract attention and arouse buying interest in your product.

Candy, lingerie, novelties, combination sets, toiletries—they're just a few of the products pushed forward by the showcase packaging of sparkling Celanese acetate. Fabricated acetate containers have a unique crystal clarity, a smooth lustrous surface. In today's help-yourself market, they can give your merchandise a chance to present itself in the glamorous setting that demands attention and excites interest for dime store items as well as luxuries.

You can buy Celanese acetate containers in a wide variety of stock and special sizes and shapes. For names of suppliers, write:

Celanese Corporation of America, Plastics Division, Dept. 108-G, 290 Ferry Street, Newark 5, N. J. Canadian affiliate, Canadian Chemical Co., Limited, Montreal, Toronto and Vancouver.

Celanese*
ACETATE TRANSPARENT FILMS

*Reg. U. S. Pat. Off.



Chances are, she'll buy
the product in the
NIBROC[®]
white bag

It's as easy as ABC to see why bags made of Nibroc White move off the shelf faster . . .

A. EYE-CATCHING! The product in a Nibroc White bag stands out and catches the eye of the housewife in the modern supermarket.

B. BRIGHTER! High-bright Nibroc White makes it easier for your customer to sell the merchant his flour, rice, coffee, meal, dog-food.

C. STRONGER! From the grocer's shelf to the housewife's pantry, Nibroc White—unusually tough yet flexible—keeps and delivers your product in perfect shape.

Put more *sell* in your package. Use Nibroc White. For samples and more information, write or phone our Technical Service Division, Dept. RD-7, in Boston.

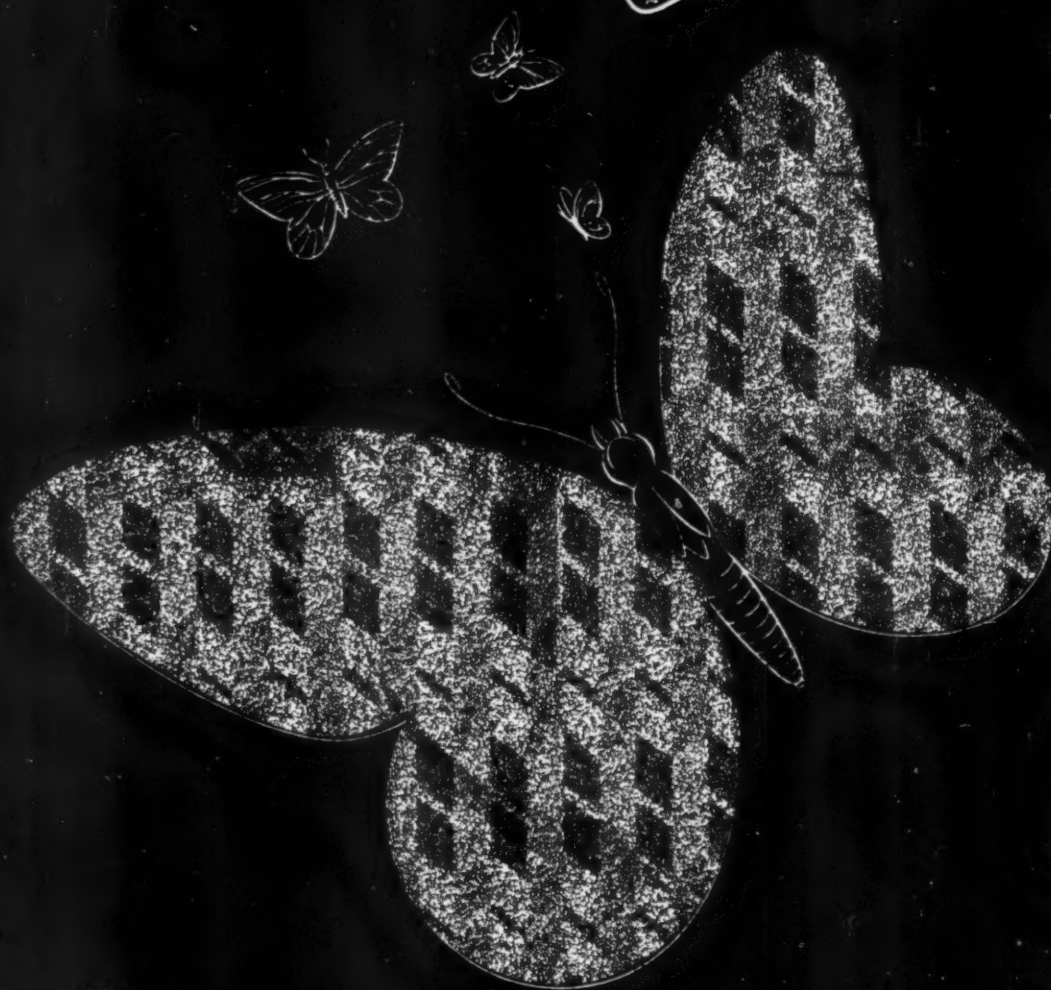
BROWN  **COMPANY**
Berlin, New Hampshire

General Sales Office: 150 Causeway Street, Boston 14, Mass.

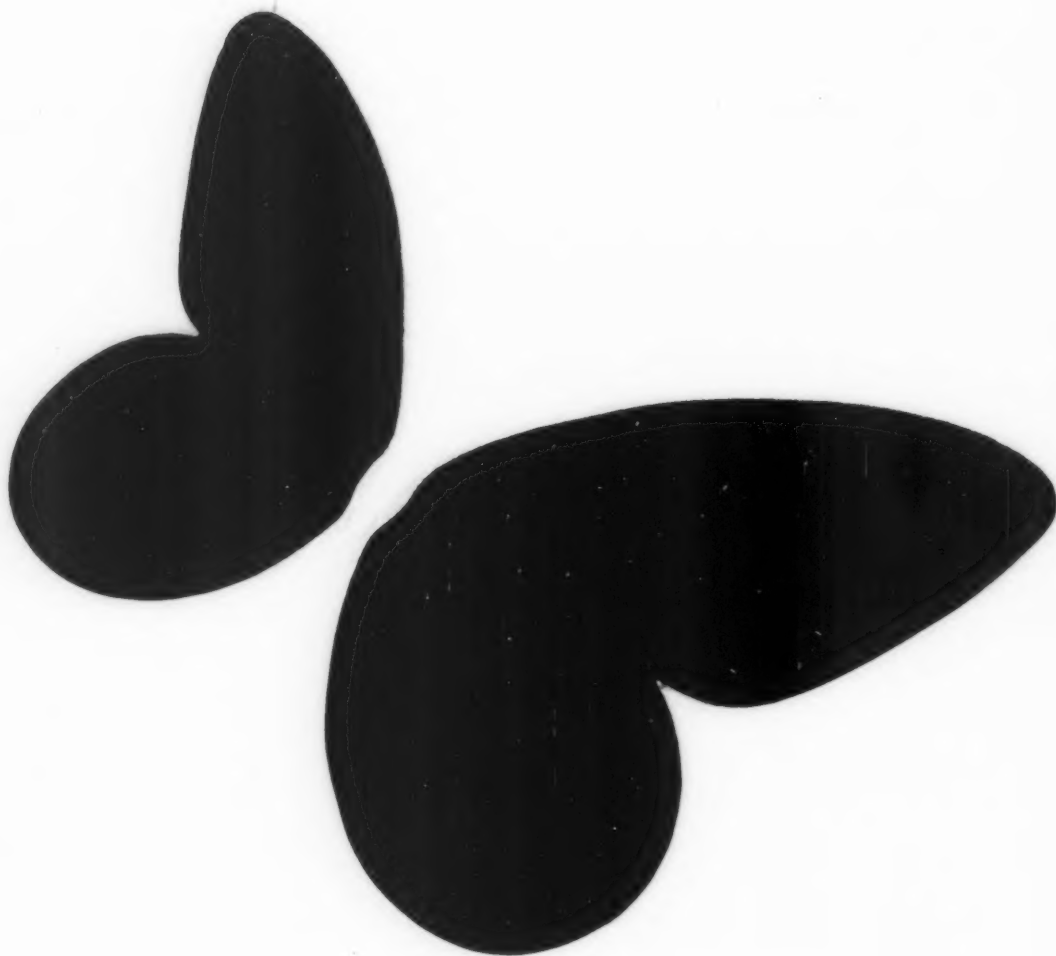
SOLKA PULPS • SOLKA-FLOC • NIBROC PAPERS • NIBROC TOWELS
NIBROC KOWTOWLS • NIBROC TOILET TISSUE • BERMICO SEWER
PIPE & CONDUIT • ONCO INSOLES • CHEMICALS

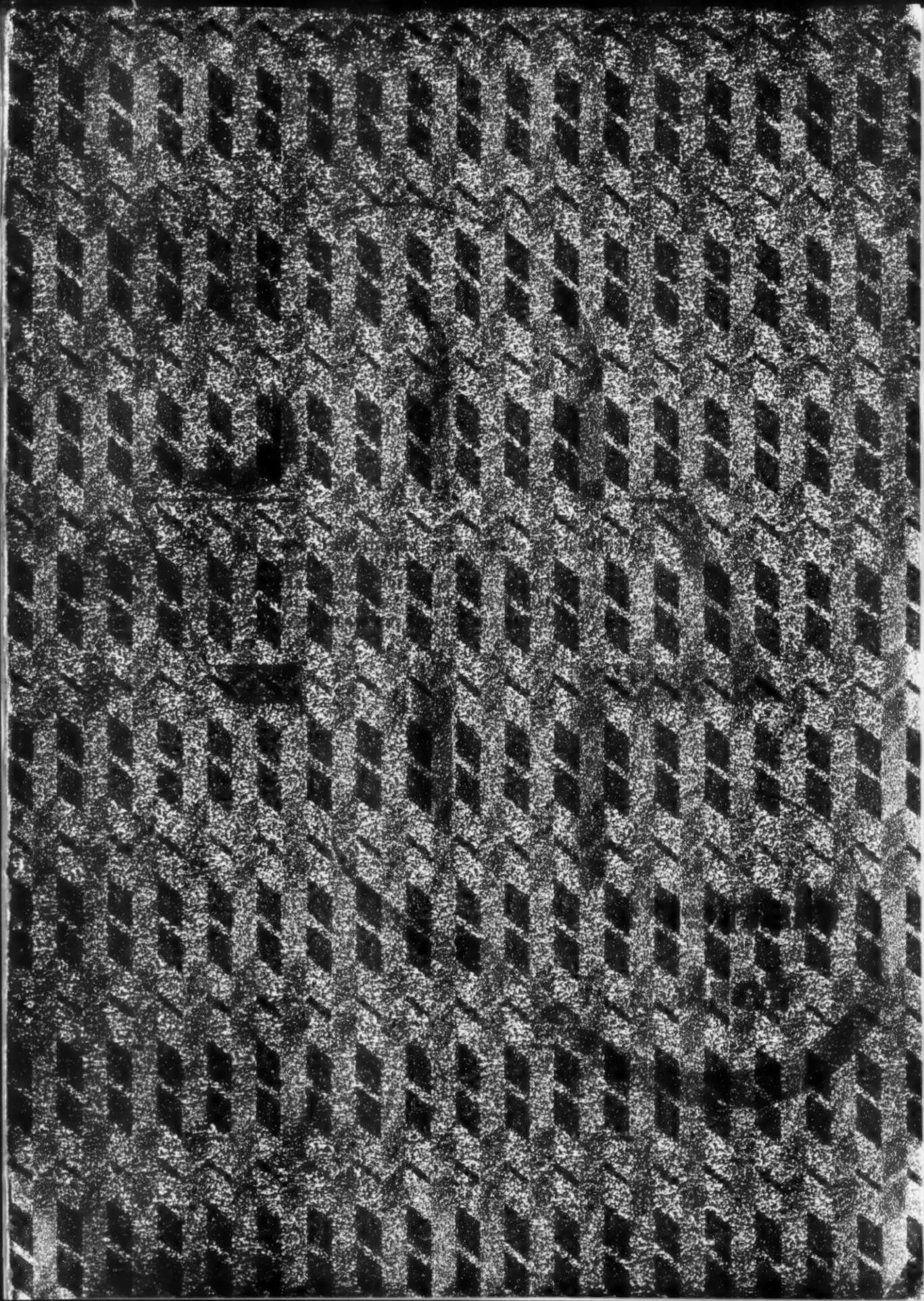
fisher's foils

net sales



FISHER'S FOILS LIMITED WEMBLEY MIDDLESEX ENGLAND
TELEPHONE WEMBLEY 8011 CABLES & GRAMS LIOFNI WEMBLEY (ABC CODE 6TH EDN)



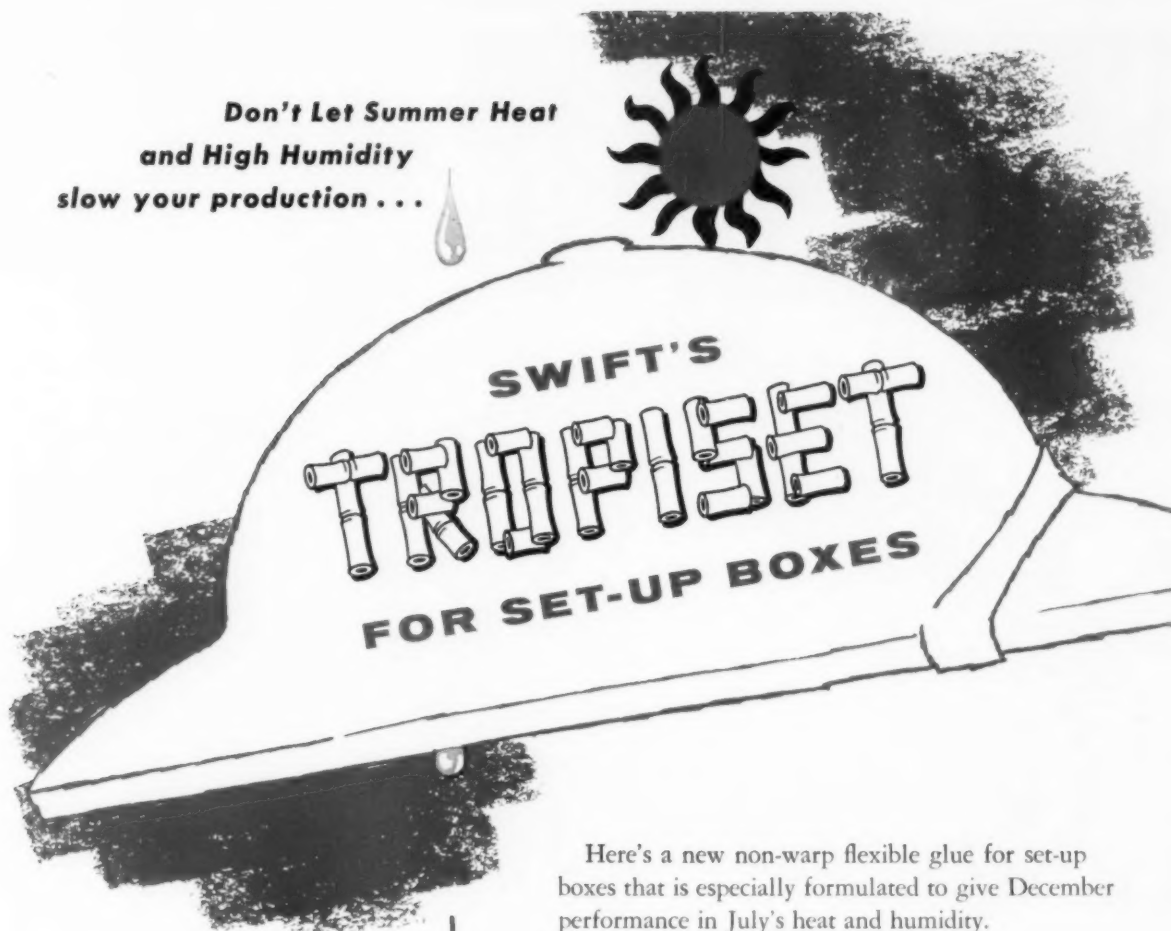


★ *A Quality Product of FISHER'S FOILS of LONDON, ENGLAND.*

Throughout all stages of manufacture, every roll of foil made by Fisher's Foils of England is *automatically controlled* for gauge consistency by the latest beam gauge. Send today for wide range of samples or ask our representative to call.

**fisher's
foils**

**Don't Let Summer Heat
and High Humidity
slow your production . . .**



SETS FAST

"Summer slowdown" can be a memory with TROPISET—It sets quickly under adverse conditions . . . Is the result of exhaustive research and intensive production testing to meet a familiar need for a product that will machine smoothly in high heat and humidity.



STAYS FLAT

TROPISET is dependable too—special ingredients permit efficient production and reliable results. A box made with Tropiset stays flat, resists warpage.



Here's a new non-warp flexible glue for set-up boxes that is especially formulated to give December performance in July's heat and humidity.

Swift's Tropiset combines the fast setting characteristics of a dry glue with the stay-flat properties of a high quality non-warp . . . without the seasonal disadvantages of either. It melts down in a jiffy, sets *fast* to help meet warm weather packaging schedules on time. It goes on in a smooth, even film, without buildup. Boxes *stay* flat in storage or transit—even under varying climatic conditions.

Yes, if summer sun and humidity promise "dog days" ahead on your set-up box machines . . . better try Tropiset *now*. When summer heat hits, you'll agree that . . .

ONE TRIAL IS BETTER THAN A THOUSAND CLAIMS



SWIFT & COMPANY

ADHESIVE PRODUCTS DEPARTMENT

4115 PACKERS AVENUE • CHICAGO 9, ILLINOIS

*Made with the skill
that assures protection*



This superbly carved and inlaid shield is a product of skillful 16th Century armor-making. Its dimensions and balance permit easy handling. The intricate carving and embossment reveal it as a masterpiece of sculpture. And most important of all, the sturdy construction and careful design gave maximum protection to the warrior who carried it in battle.

J&L Steel Containers offer dependable protection for your products. They're built of sturdy, high-quality J&L Steel Sheet. Their careful construction insures perfect fit of all

joints and movable parts. And they have a trim appearance which can be attractively decorated with colorful designs and illustrations by J&L's accurate lithographic process.

In addition, coatings and lacquers are evenly applied—both inside and outside; and J&L pails and drums are chemically treated to keep all surfaces clean and dry.

For the protection your products need, depend on J&L Steel Containers. You can order them through plants in leading industrial centers, and you'll find J&L service prompt and efficient.



CONTAINER DIVISION

Jones & Laughlin

STEEL CORPORATION

405 LEXINGTON AVE.
NEW YORK 17, N. Y.

**J&L
STEEL**

Your product's
are
BEST
SOLD
in a

BEST features

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business is wrapped
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Comments from reader-customers were enthusiastic on the plastic SHOWBAG used by the St. Louis Globe-Democrat for home-delivery. The brightly printed plastic bags included a notation that they can be reused as refrigerator or storage bags.

SHOWBAGS used by Sherwin-Williams Co., for their Kem-Tone and Dasher brand paint rollers, show the color and texture of the rollers through the clear polyethylene and also provide a handy, moisture-proof storage bag. Printed color combinations beautify the rollers and carry instructions.

Fishing rods, too, benefit from SHOWBAG packing. Orchard Industries' fly and spinning rods are encased in "DUET" SHOWBAGS... bags divided by a center seam into two compartments. Easy button and tie string closure. "DUET" SHOWBAGS provide excellent protection during shipment, add eye appeal, and provide safe and convenient storage.



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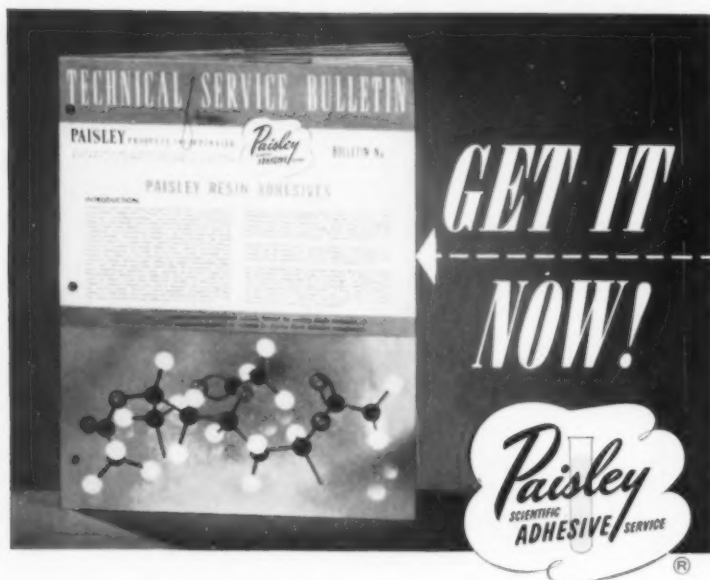
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THE MODEL C-10-CC

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This versatile machine is receiving wide acceptance in the candy industry. It is possible on the one machine to fill an entire range of candy items without the use of extra equipment provided the same size carton is used. The C-10-CC automatically opens flat folded cartons, tucks bottoms, cuts, forms and inserts liner, volume fills candy, then folds and tucks liner top flap of carton. The liner may be omitted when desired.

These and other machines manufactured by **US** will fulfill your requirements for packaging machinery. It will pay you to discuss your problem with **US** as it has the packers of the containers shown. Write **US** today.



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The logical molder for you to consult regarding that product or package of yours which is to be made of polyethylene is Tupper. Tupper has done more than any other molder to make molded polyethylene a practical reality.

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Tupper's combination of experience, technical ingenuity, and the most modern equipment is at your service for the custom molding of your product in polyethylene. You can do no better than the best ... and the best at molding polyethylene is Tupper!

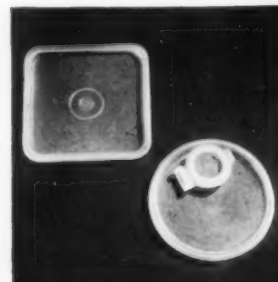
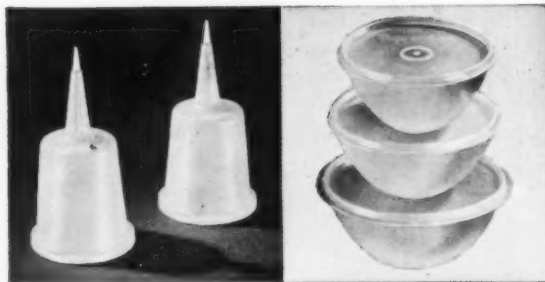
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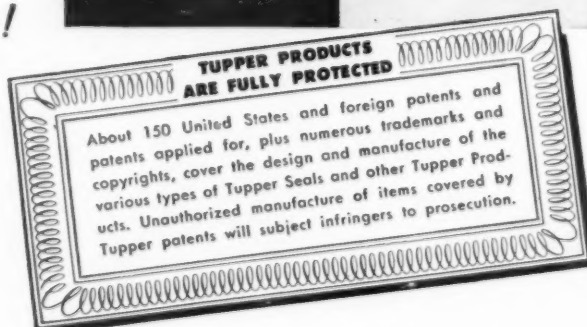
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Tupper Seals are air and liquid-tight flexible covers. The famous Pour All and Par Top covers are designed for easy dispensing. They are made in sizes to fit all Tupperware containers.



When equipped with Tupper Seals, Tupper Canisters, Sauce Dishes, Wonder Bowls, Cereal Bowls and Funnels in various sizes are the most versatile reusable containers you have ever seen.





What's your container, and how fast do you want to fill it?

IF your product has consistency that falls anywhere between evaporated milk and potted meat, here's a way to boost the filling speed of nearly all tins, jars and composition containers.

You can turn out as many as 800 cans a minute—sometimes even more—with Pfaudler Rotary Piston Fillers. Five standard models are available to handle sizes from 1 ounce to an imperial gallon.

1/10-oz. accuracy

Depending on your product and size of container, you get accurate filling to very small tolerances—as little as plus

or minus 1/10 of an ounce!

And you are able to adjust the amount of fill quickly by hand, without even turning the machine off.

One-man cleaning

Working alone, one man can clean a Pfaudler Filler thoroughly in about 30 minutes. He needs no tools, and the only parts he must remove are the valves and pistons, which slide out.

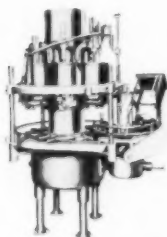
60 to 800 cans per minute

Select the filling speed best suited to your own production needs. On the

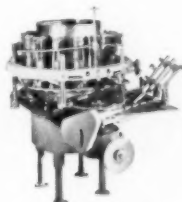
table below, model number indicates pistons (RP-6 has 6 pistons, etc.).

FILLER	DIA. OF CONTAINERS HANDLED	RATED SPEED (containers per min.)
RP-6	202 to 404	60 to 175
RP-7	401 to 700	40 to 100
RP-14	202 to 404	150 to 400
RP-21	202 to 303	250 to 600
RP-35	202 to 303	to 800 (has operated at more than 1000)

If it's filling speed you want, plus a chance to cut the cost of buying, maintaining and cleaning equipment—mail the coupon or call in your Pfaudler representative today.



FOR BIG CONTAINERS. Model RP-7 has typical Pfaudler convenience features, handles capacities up to 5 quarts.



14-STATION FILLER. Model RP-14, has no-can-no-fill device, as do all four other Pfaudler filling machines.



"WORLD'S FASTEST FILLER." RP-35 has special features, including electric brake that stops rotation in 2/10 of a second.



THE PFAUDLER CO., Dept. MP-7, Rochester, N. Y.

- ☐ Please send me Bulletin 911, "Rotary Piston Fillers."
☐ Please send a representative to discuss my filling problem.

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THE PFAUDLER CO., ROCHESTER 3, N. Y.

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ANNOUNCEMENT

The coming Modern Packaging Encyclopedia Issue for 1956 is now open for advertising space reservations. Copy deadline is August 5. Publication date is November, 1955. For rates and other details write Advertising Department, Modern Packaging, 575 Madison Ave., New York City 22, N. Y.



Distinctive Du Pont Cellophane packaging helps a quality tissue sell itself

These popular new Charmin paper products are wrapped in Du Pont Cellophane to give them more sales power in a highly competitive market. Sparkling-clear Cellophane packaging gives Charmin napkins and colorful tissues the important advantage of *complete visibility*—visibility that helps them sell themselves. And the glistening good looks of the Cellophane package reflect the high quality of the products—spark impulse sales.

Selling and protecting quality paper products is just one use for Du Pont Cellophane. You'll find that this versatile film makes possible a wide range of packaging applications. Give *your* product extra eye appeal, "plus" protection. See your Du Pont representative or a converter of Du Pont films. Or write: E. I. du Pont de Nemours & Co. (Inc.), Film Dept., Wilmington 98, Delaware.

DU PONT PACKAGING and INDUSTRIAL FILMS

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ACETATE • "MYLAR" POLYESTER FILM



REG. U.S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING
... THROUGH CHEMISTRY



THIS GAIR CONTAINER talks turkey

Quite a selling job Gair containers are doing for Shenandoah Valley Produce Company's individual frozen turkeys.

Attractively printed in bright green and brown on Gair corrugated board, the family of five vari-sized containers all open to display contents, are easily re-locked.

Excellent for displays in supermarkets and food stores, the container features an extra-sturdy top to prevent caving in when containers are stacked. Gair's eye-catching printing job makes the containers hard-

working salesmen for Shenandoah on the way to market . . . in the market . . . and on the way home.

"It's the most suitable, versatile, and efficient turkey box I have seen yet," says Frank Ferrara, Shenandoah's general manager.

This is one more industry where Gair container displays are working overtime. How about your product? If you've had trouble winning sufficient display space in retail outlets, a Gair display container may be your answer. You can find out simply by dropping us a line.

YOU'RE LIVING NEXT DOOR TO THE EXPERT

GAIR CONTAINER PLANTS: Atlanta, Ga. • Cambridge, Mass. • Cleveland, Ohio • Holyoke, Mass. • Jackson, Miss. • Los Angeles, Cal. • Martinsville, Va. • New Orleans, La. • No. Tonawanda, N. Y. • Philadelphia, Pa. • Plymouth, Mich. • Portland, Conn. • Richmond, Va. • Syracuse, N. Y. • Teterboro, N. J.



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Sparkling Gold is pressure packed in the "Modern Design" and safe, seamless construction of SPRA-TAINER by Daggett and Ramsdell, for exclusive distribution by

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Famous SPRA-TAINER is one of many finest quality cans of Crown creation. Choose from our Complete Line to meet your requirements for modern metal packages that sell as well as protect your product.



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CROWN CORK & SEAL COMPANY, INC.
CROWN CAN DIVISION

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Printers**

**Why use different Inks for
FILMS, FOIL and PAPERS?**



**You can print almost everything with
BBD's multi-purpose "400 Series" Ink**

If you print any one of the materials listed on the right you'll get glossier impressions, stronger adhesion and better all-around ink performance with BBD's "400 Series" in the fountains.

But, if you print two or more of them, "400 Series" Ink not only will give you superior printing results—it will save you money too. "400 Series" is the multi-purpose ink that you can use without any alteration on every standard type of cellophane, polyethylene, foil, glassine and paper. And you can use it with your regular alcohol solvent too—"400 Series" Ink does not require special solvents that may adversely affect rubber plates and rollers.

By standardizing on "400 Series" Ink you get maximum flexibility with minimum ink inventory. Because you can run a variety of stocks with "400 Series" Ink you eliminate the nuisance of "hurry calls" for special seldom-used inks... are never "stuck" with

leftovers of partly-filled cans. In fact, when you use "400 Series" Ink you can run one job after another—regardless of stock—without changing ink or cleaning pans.

In addition to its practical advantages, BBD's "400 Series" Ink features unusually good adhesion and flexibility... high color strength and opacity... outstanding fastness to light and bleed-resistance to wax and oils. It is self-soluble and solvent-balanced to prevent ink build-up on plates or rollers... assure clean, smooth, glossy impressions at running speeds up to 475 fpm... reduce "souring" problems to a minimum. Also, because it is ground exceedingly fine, "400 Series" Ink has no abrasive action to wear out plates and engraved rolls prematurely.

No newcomer, BBD's "400 Series" Ink has been used successfully by leading flexographic printers since 1950. Isn't it time to give it a trial in your plant too?

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CELLOPHANE**

**Anchor-coated
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No special solvents required



The case of the cautious nickel

He's in no hurry. With a nickel to invest he can well afford to take his time. Then finally he'll buy the biggest piece that looks the best.

That is sound buying strategy of a kind his parents know. They, too, most often select the best value—in the package that looks most appealing.

Putting quality and value into your prod-

uct is your job. Packaging it in a most appealing way is ours. This combination of your job and ours can make a great difference in sales—whether the price is a nickel or a great deal more than that.

Can't we explore together these sales-building packaging possibilities? Call a Gardner packaging specialist!



Many of America's greatest products go to market in "Cartons by Gardner"

GENERAL OFFICES: Middletown, Ohio—PLANTS: Middletown, Ohio; Lockland (*Cincinnati*), Ohio
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THE GARDNER BOARD AND CARTON CO.



Manufacturers of Folding Cartons and Boxboards



FROM THE GARDNER GALLERY OF FAMOUS AMERICAN PACKAGES



*Perchies is a trade mark of Gorton-Pew Fisheries Company, Ltd.

Designed to Sell

Tonight's dinner is often suggested by the tempting full-color pictorial reproduction of a package design — such as this one for Gorton-Pew, printed by Nashua. And, the color uniformity of Nashua printed packages, wrapper after wrapper, inspires customer confidence.

At Nashua, responsibility for maintenance of color standards is entrusted to automatic control equipment. The *Viscotrol* (left), developed by Nashua, ac-

curately regulates color during an entire press run by providing a continuous automatic control of ink viscosity.

"The Power of the Package" to change buying habits and move merchandise is a story of Nashua control devices as well as high craftsmanship. Let a Nashua representative show you this presentation. Nashua Corporation, Nashua, N. H. In Canada: Canadian Nashua Paper Company, Ltd., Peterborough, Ontario.

40 YEARS OF CREATIVE PACKAGING

NASHUA
Corporation



MODERN PACKAGING

July 1955, Vol. 28, No. 11

MAKING UP AN ORDER is easy for the wholesaler when products come bundled in cellophane in units of four, six or 12, the way druggists prefer them. Stock stays clean, is directly identifiable and easy to inventory. One drug company is reported to have saved \$75,000 a year by substituting cellophane bundling for its former printed shelf cartons.



BUNDLERS TURN TO FILM

With today's demand
for fraction-of-case units
of distribution, cellophane bundling
proves both practical and economical

Bundling, as a means of dividing the contents of a shipping case into easier-to-handle fractional units and protecting the packages during distribution and shelf storage, is a time-honored practice in the packaging field. For years, a kraft paper wrap, printed or imprinted to identify the contents, or a chipboard "packer" have been generally used.

The advantages of using a transparent film for bundling were obvious. No imprint would be required because the unit packages would speak for themselves, the sparkling film would add a quality look and the sales appeal of package color and design would show through when these multiple units were stacked, as they often are, right on the retail shelves



PHOTO COURTESY DE PONT.

PERFECT IDENTITY comes from the unit package itself when a transparent film is used. This Bromo Seltzer bundle works as a display package stacked right on druggist's back shelf.

of drug, toiletry and hardware stores. Any serious attempt to use film for this purpose has, however, been held up until recently by shortages and high prices.

Now, scores of packagers shipping unit-cartoned consumer products are turning to cellophane and other films for the bundling of shelf quantities of four, six, 12 or more packages. In addition to the obvious advantages cited above, they are finding that it wins favor with both distributors and retailers because of ease of handling, inventorying and keeping clean stock; that the bundling operation with modern heat-sealing machinery fits smoothly into production and—surprisingly—that the cost is not only within bounds but in many cases actually represents a sizable saving over

methods previously used, particularly where printed packer cartons or sleeves were employed.

It appears to be one of those booming trends that can sweep rapidly through the field. For competitive reasons alone, if nothing more, it requires investigation by every packager shipping a product that is, or can be, bundled.

To name just a few of the companies who have reported favorably on their adoption of film bundling, there are Pine Bros., for cough drops; John H. Breck, Inc., for Breck shampoo; Noreen, Inc., for its hair rinse; the Gillette Co., for razor blades; Ansco, for camera film; Atlas Tack Corp., for carpet tacks and nails; American Optical Co., for eyeglass lenses; the Bayuk Cigar Co., for five-packs of Phillies cigars, and—for a wide variety of drugs, remedies and other drug store items—Abbott Laboratories, the Ames Co., the Black & White Co., Emerson Drug Co., Hoffman-La Roche, Inc., the Kendall Co., McKesson & Robbins, Mead Johnson & Co., the Medical Supply Co., Miles Laboratories, Plough, Inc., Smith, Kline & French, E. R. Squibb & Sons and Winthrop-Stearns.

Although some interest and activity has been found in bundling with polyethylene and other plastic films, for their greater strength and longer shelf life, the film used by all of the above companies—and almost universally elsewhere—is cellophane, because of its lower cost and trouble-free, high-speed performance on wrapping and heat-sealing machinery. Heat-sealing types of cellophane in either the 300 or 450 weight, depending upon the weight of the product, are used.

In the main, economies achieved through bundling in cellophane are: (a) savings in materials costs, (b) savings in labor costs, (c) reduction of shipping weights, (d) reduction of the size of shipping containers and (e) the cutting down of warehouse space for inventory of packaging materials.

It has been found also that bundling provides a new flexibility in the packaging of shelf units since the number of units in the shelf package can be changed simply by adjusting the wrapping machine to handle a larger or smaller number.

Another big advantage is instant brand and package-size identification for the wholesaler and retailer without exposing loose packages to dust



PHOTO COURTESY OLIN.

IMPROVED DISPLAY of its golden-foil cartons was prime reason for Breck's switch to cellophane, eliminating the chipboard carton which had to be printed for identity and served to hide package's appeal.

BRECK'S BUNDLING is smoothly handled on this semi-automatic machine. Girl at the left feeds six cartons at a time; machine then wraps them in cellophane and makes one end seal; girl at the right makes final end seal on a hotplate. Speed of operation: about 24 bundles a minute.

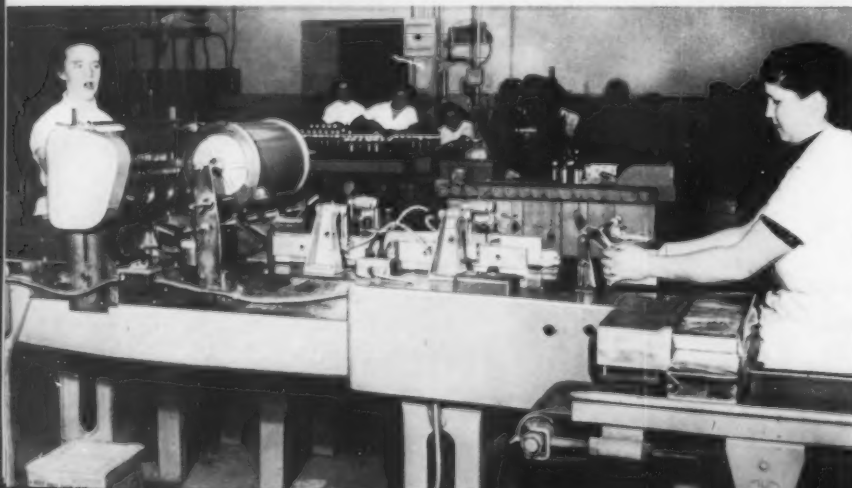


PHOTO COURTESY STAVANIA AND SCANDIA MFG. CO.

MODERN PACKAGING



THREE WAYS to bundle and identify. Noreen Color Rinse uses printed U-board around six cartons. Black Draught puts four in a row in printed cellophane. Blue Jay plasters come 12 high; ends carry identity.



DOCTOR'S SAMPLES travel neatly by sixes when they are bundled in cellophane. Sometimes the bundling technique is used by pharmaceutical manufacturers to introduce new products by wrapping them along with the old ones.

and dirt. Film overwraps also can give added moisture protection to products in instances where such added protection is desirable, although that is not usually the chief purpose of bundling. When the bundles are broken to fill smaller orders at the wholesale level, it is easy for clerks to see how many items remain in stock.

The same wrapping equipment used for bundling shelf packages can be used also to make up special promotional combinations or "deals" of multiple units for sale at the retail level.

Savings in cost

Substantial cost savings are reported by some of those who have adopted film bundling to replace packer cartons. A drug company which previously used a printed folding packer carton for cartoned bottles of aspirin finds that in changing to a simple cellophane bundle wrap it has cut the expense of materials by from \$5 to \$15 per thousand shelf units—reportedly a saving of \$75,000 a year for this company.

Using a semi-automatic machine, John H. Breck, Inc., manufacturers of the three Breck shampoos, are saving about \$7.50 per thousand bundles, they report, over the chipboard cartons previously employed and at the same time are gaining the great advantage of showing off, rather than hiding, their distinctive gold-foil carton which encloses each bottle. In addition, with the use of cellophane, the Breck packages do not show dust or the effects of scuffing.

Atlas Tack saves 1 cent per dozen boxes of tacks in replacing, with cellophane and a paperboard tray, the

two-piece paperboard box previously used.

Substantial savings in labor are possible with film where the bundling is done by fully automatic machine. When mechanized wrapping replaced hand cartoning at one plant, the company found that one girl operating an automatic machine could handle the output that previously required four operators.

AnSCO, at Binghamton, N. Y., has packaged all of its black-and-white camera film in cellophane bundles for some time now and regards it primar-

ily as cost saving rather than an appearance factor. Any other satisfactory method of packaging distribution quantities was found to be more expensive, AnSCO reports. The company uses the latest model of a fully automatic cellophane-wrapping machine which has a speed of 180 a minute.

Savings in shipping weight are illustrated by one hardware item—a furniture glide of the type used under legs of tables and chairs—which is sold on cards. Up to now, the glides have been shipped 24 cards to a packing carton and four packers—a total

ILLUSTRATIONS THIS PAGE COURTESY OLIN.

BASIC PACKAGE TYPES	BASIC BUNDLING ARRANGEMENTS
If your product is TALL (boxes containing bottles, cans, or tall objects)	
If your product is FLAT (trays, sleeves, carded items, packets, etc.)	
If your product is LONG (boxes containing tubes or long objects)	
If your product is ROUND	
If your product is an IRREGULAR shape	Use collar, U-board, or tray on individual item; then select bundling pattern most suitable.

of 96 cards—to a shipping case. Now under test is a method by which the cards are put up in cellophane bundles of a dozen, the packers are dispensed with and 16 bundles—or 192 cards, exactly twice as many—are shipped in a case identical to the one that previously accommodated only 96 cards. Combined weight of the two shippers previously required to handle 192 cards was 20 lbs.; the weight of the single shipper now used

for the same quantity is 16 lbs. Thus, the firm ships the same amount of merchandise in half the number of shipping cases and saves 20% in weight at the same time.

Hardly any packaging material takes less warehouse space than a roll of cellophane. The manufacturer of a bottled cosmetic item, for example, can wrap 2,941 shelf packages of sixes from one standard roll of cellophane 13 in. wide. To provide the

PHOTO COURTESY OLIN.



TWO IN A BUNDLE solved problem for American Optical Co., keeping two matched lenses together without costly over-carton, yet permitting easy split-off if only one lens is ordered.

FOUR STEPS IN PINE BROS.' DOUBLE BUNDLING



1 EACH BOX is overwrapped with tear-strip cellophane—the first step in product protection.



2 TWELVE BOXES are packed in display tray with fold-over cover and bundled in cellophane.



3 TWO TWELVES are then bundled on automatic equipment—giving a third protective cellophane layer.



4 TWELVE BUNDLES fill a shipping case and give the 24-package units needed to fill most retailer orders.

same number of shelf packages with the use of shelf cartons, more than 11 shipping cases full of flat shelf packers would be needed; these would occupy 29 cu. ft. of storage space in comparison with less than 1 cu. ft. for a single roll of cellophane.

It is also pointed out that cellophane bundling can lower capital investment in packaging-materials inventory. Printed cartons, particularly, must be ordered in large lots to obtain an advantageous price—a serious problem for the small manufacturer. A considerable amount of warehouse space must also be tied up to get the benefit of quantity-purchase discounts—or a company must pay higher for ordering in smaller lots. Cellophane may be purchased in rolls on a 30-day basis, so that no burdensome quantity need be on hand at any one time.

Flexibility

Easy flexibility in the number of units included in a bundle is sometimes advantageous to meet specific customer requirements. A study in the drug field indicated that most druggists order in small lots—half dozens or less, sometimes only four or two packages of a certain item at a time—so that their store shelves may be shared by a wide variety of brands and sizes.

For greater convenience, it is feasible in some cases to make up the bundled units with tear-tape openers. The tape can be incorporated in a way that permits wholesaler or retailer to break the original shelf package into smaller units similar to popular fractional packs in the food field.

Variations in the number of units in shelf packs usually depend upon



BUNDLED TRAY for 12 boxes of nails and tacks perfectly met retailer needs and, by eliminating the previous telescope cover of the box, saved half of the package-material costs for the Atlas Tack Corp.

PHOTO COURTESY OLIN.

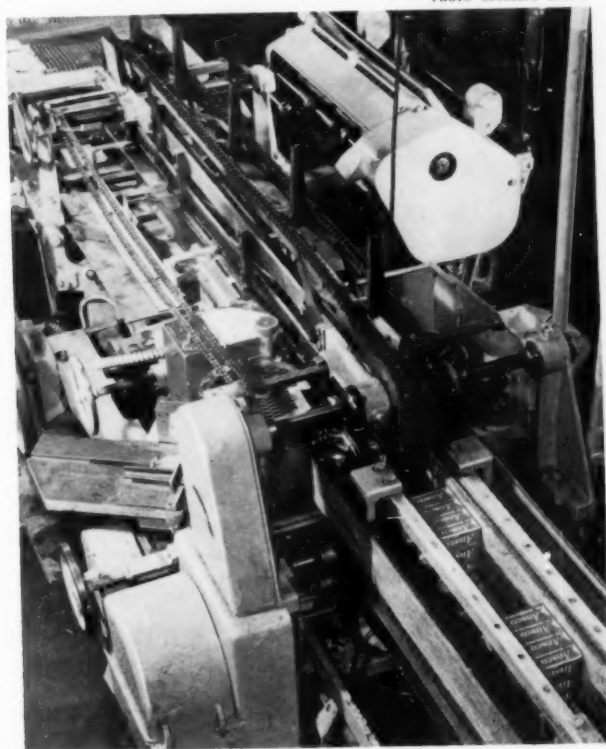


PHOTO COURTESY ANSCO.

FULLY AUTOMATIC machine bundles 12 Anso film cartons in heat-sealed cellophane. The Model FA2B machine (Package Machinery Co.) has a speed of 180 units per minute.

merchandising practices, and whether an item is a fast or slow mover.

One company found sixes of bottled aspirin more satisfactory to wholesalers than the 12s it supplied formerly. The drug firm of Smith, Kline & French likes sixes for some items, but if an item is very small or very inexpensive it has found that a dozen per shelf package is satisfactory.

Apparently, fast-moving items priced over \$1, such as home permanents, are most successfully shelf packaged in units of six. Slow movers selling for more than a dollar and large sizes are preferred in bundles of threes or fours.

Machines and arrangements

At least six leading firms produce wrapping machines suitable for film bundling operations.* The user has a choice of either fully automatic or semi-automatic equipment. Selection may be made to suit particular requirements and both machinery manufacturers and cellophane suppliers can aid the manufacturer in determining what is most feasible and economical for a particular need.

Special attachments may be incorporated for package features such as tearing tapes and code dating. Equipment may be integrated with automatic accumulator and conveyor mechanisms to suit specific needs. Test packages may be made up to determine the physical characteristics and the distribution requirements of individual products.

Certain basic package types obviously require basic bundling arrangements. These arrangements naturally are governed by package shapes, depending on whether a package is tall, flat, long, round or irregular. Sometimes an irregularly shaped

* Names on request to MODERN PACKAGING Reader Service.

THE TEAR TAPE has its uses in cellophane bundling. Gillette uses it for consumer and retailer convenience in opening 10-package trayed bundle. It may be placed, as in Mead Johnson package, so that one part of bundle may be split off.



PHOTO COURTESY SCANDIA MFG. CO.



PHOTO COURTESY OLIN.

product can be bundled most efficiently using a collar or U-board.

If a product is already individually wrapped in cellophane, it is sometimes necessary when bundling to protect the individual cellophane wraps within the bundle by means of a collar that protects the sides where the bundle seals are formed. The Gillette razor-blade bundling is done in this manner. A special new type of coated cellophane that is itself heat sealable but which will not adhere to ordinary cellophane is also recommended for this purpose; in that case, no collar is needed.

Breck's operation

John H. Breck, Inc., Springfield, Mass., is now using cellophane bundling by sixes throughout its 4-oz. line of Breck shampoos, sold in drug, grocery, syndicate and department stores, as well as beauty shops throughout the country. It has experienced no instances of cellophane failure.

The individually gold-foil-cartoned bottles flow right off Breck's production line into specially adapted semi-automatic bundling machines. A double row of the 4-oz. packages is fed by an operator into the machine, which takes six packages at a time and overwraps them with cellophane. The bundle is heat sealed at one end by the machine and received by a second operator who folds down the

remaining flap and seals it by moving the package across a heating unit. The wrapping is controlled by the second operator who works a trip to start and stop the machine. The machine bundles 140 bottles of shampoo per minute and four bundles are shipped in the shipping case in which the bottles were received.

Formerly, the packages of shampoo were deposited on a table at the end of the production line, where three or four employees manually placed six packages in a chipboard carton and then packed four cartons into the shipping case.

Special situations

Several examples illustrate how specific merchandising and distribution problems can be solved by the adoption of bundling.

Mead Johnson & Co. is one of several pharmaceutical firms now bundling professional samples of ethical drugs. A combination package enables the firm to introduce a new product to doctors along with samples of established preparations. The cellophane bundle is therefore made up of three different products. A tearing tape affords easy opening. A corrugated platform has been designed to go under the packages in the center to equalize the height of the smaller inside packages so that they can be combined for convenient handling in the same bundle with larger items.

For its boxes of tacks, Atlas Tack Corp. originally had the idea of conventional bundling, until it was discovered that the trade wanted a tray in which to sell the packages on the counter. The company had previously been packaging the individual units in a two-piece telescope box, the bottom of which was used for this counter display purpose.

With the new cellophane-wrapped package, a paperboard tray is retained as a base, but the top of the box is eliminated. Also, the company has installed its own automatic machine for setting up the trays from blanks, which brings the tray cost down to less than the previous cost of the bottom alone. With the cellophane overwrap costing \$4.80 per thousand bundles, the total cost for materials per shelf package has been cut almost exactly in half. The saving, it is reported, has more than paid the cost of new, improved window cartons for the $\frac{1}{2}$ - and $\frac{3}{4}$ -lb quantities of tacks.

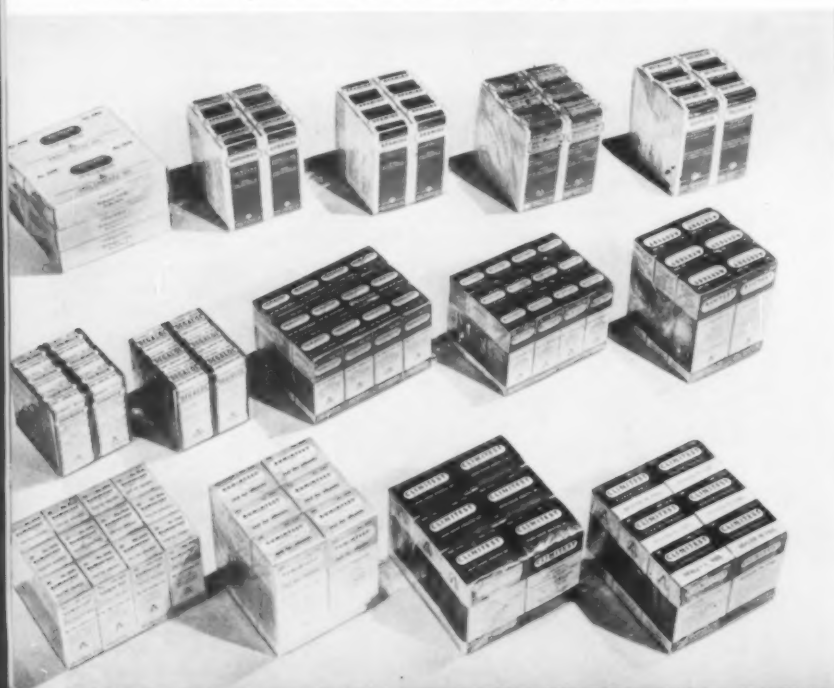
Sometimes a bundle of only two items may be advantageous. The American Optical Co. had the problem of shipping a pair of its Tillyer optical lens blanks together, in case the pair were to be used together in eyeglasses, but making it possible to break the package in case only one lens were required. Previously, each lens was individually cartoned and the two boxes then placed together in a third fully printed, coated-stock folding box. When a single lens was ordered, a clerk had to open the outer box to remove one, creating an inventory problem. Now the two individual cartons are simply bundled together in 300 MST cellophane, leaving no question as to the remainder. With this improved facility, packaging materials costs are reduced $\frac{3}{4}$ of a cent and the shipping weight is cut $\frac{3}{4}$ oz. per pair.

Summary

Manufacturers, of course, have a choice of materials for producing a shelf package. Many will still find paperboard cartons or sleeves most practical. Others, where the customary unit of distribution is either a full case or a single package, do not need shelf packages at all. But, whatever the material, the trend appears to be toward more and more shelf packages, in smaller and smaller sizes.

Kraft paper is of course less expensive than cellophane as a wrap. (This article continued on page 178)

FLEXIBILITY is a big advantage of cellophane bundling, in that number of units in bundle as well as its dimensions may readily be changed by adjusting the wrapping machine. This wide range of bundle contents and sizes is produced by the Ames Co. on a single wrapping machine.



Alka-Seltzer's innovations

Foamed polystyrene plug replaces cotton
in glass vial; four-tablet foil pack
provides pocket-or-purse convenience

Two recent packaging innovations introduced in conjunction with Alka-Seltzer tablets by Miles Laboratories, Inc., Elkhart, Ind., underline once again the facts that (1) even a successful package can be improved and (2) a completely new type of package, if properly designed, may pave the way to increased market opportunities for long-established products.

The two examples in this case are the company's adoption of a foamed polystyrene plug or cushion in the top of its familiar 8- and 25-tablet glass tubes of Alka-Seltzer and the launching of a convenient new consumer package containing four Alka-Seltzer tablets individually sealed in foil-laminate envelopes.

In connection with the regular glass-tube packs of Alka-Seltzer, the company has long used a wad of cotton in the top of the bottle, beneath the metal screw cap, as a cushioning agent for the tablets. The consumer was instructed to remove and discard the cotton once the package was opened, to avoid pick-up of moisture, which might adversely affect the tablets.

The new plug, of featherlight foamed polystyrene, measures approximately 1 in. in diameter and is $\frac{1}{8}$ in. thick. In addition to its resiliency, which provides the desired cushioning effect for the tablets, the plastic disk slides out of the bottle easily and is much more convenient for the user. Additional cushioning for the tablets is provided by a small amount of cotton placed in the bottom of the container; this can be left in the tube until it is discarded.

Alka-Seltzer's Handy Pack, completely new, supplements the regular glass-tube packages and was developed principally for convenience outlets. It consists of a shallow, printed paperboard tray, or base, of tab-lock automatic construction, having an unprinted cellophane overwrap with tear-strip openers. Measuring only $4\frac{1}{2}$ by 2 $\frac{1}{2}$ in. and relatively flat, the new package has little bulk and may be easily slipped into the pocket or purse. Within the package, each tablet is individually sealed within its own laminated-foil wrap, printed in Alka-Seltzer's familiar light and dark blue and carrying the product identi-

PHOTO COURTESY DOBECKMAN CO.



TEAR STRIP OPENS cellophane outer wrap of new Handy Pack, containing four tablets individually sealed in foil laminate.

fication along with indications and dosage. Automatically packaged in a continuous strip of the foil material, the tablets are separated into units of two packets each, which form a double layer in the package. Between tablets, the strips are scored so that they may be easily separated.

The foil envelope provides lasting individual moisture protection for each tablet, making it possible for tablets to be carried about until needed.

CREDITS: Foamed polystyrene plugs fabricated of Dow's "Styrofoam." Paperboard "Kliklok" tray for Handy Pack supplied by American Coating Mills, Div. Robert Gair Co., 228 N. La Salle St. Chicago 1. "Metalam" foil-laminate envelopes and cellophane tear-tape by The Dobeckman Co., 3301 Monroe Ave., Cleveland 13.

POLYSTYRENE PLUG (center) of feather-light foamed plastic, now used as top cushioning plug in both sizes of tubes, can be inserted by machine along with tablets.



COMPONENTS of Handy Pack. Shallow paperboard tray is automatically set up with lock-tab construction. Twin foil envelopes are perforated for easy separation.





COMPLETE VISIBILITY, toughness and easy stackability are features of this specially molded vinyl package with three-color printing applied on the lid by the automatic silk-screen process. This is the first known use of molded vinyl plastic in this manner in the food field. Vertical ridges which are molded in the side walls of the container add to its rigidity.

RIGID VINYL FOOD

A new entry has joined the transparent packaging race. Rigid vinyl—said to be tougher than polystyrene and a better moisture barrier than acetate—is now being used by C. M. Pitt & Sons Co., Baltimore, in color-printed molded plastic containers for its line of conserved fruits.

Other packagers who have been looking for a package that is relatively inexpensive, shatterproof, completely transparent and easily stacked and, at the same time, a good moisture barrier, will be watching this development with interest.

Pitt's production at present is limited. A 4-oz. size is on the market and demand is running well ahead of supply. Later, it is hoped that 8-oz. and 1-lb. sizes may be added.

The molding process, suggested and developed by the plastics molder who is now supplying the containers, is said to be new and unique.

Conserved fruits are used, for the most part, as one of the principal ingredients in fruit cakes. They must be handled with considerably more care and attention than that given to most baking needs; their role demands both good flavor and attractiveness.

The pieces of fruit must stay soft and tender, so that the finished cake may be sliced evenly. Their characteristic bright colors must be preserved. And, needless to say, the fruit must remain fresh and flavorful.

There are, of course, many ways in which products of this kind might be packaged to keep them soft, colorful and tasty. Traditionally, they have been packed in tin or glass, both of which do a fine job of protection. But Pitt has some extra merchandising goals in mind: complete visibility, easy reclosure and reduced weight.

The glass jar which, until a short time ago, was the only container used for Pitt's fruits, offers a good deal of visibility, but the conventional lid is not very easy to replace once opened and its solid surface blocks off some of the very colorful food product within the jar.

Trying to improve on this closure and get a lighter container, Pitt first experimented with transparent bags of polyethylene-coated cellophane. These met with little success; they could be punctured, they were difficult to reclose and, a most important consideration, they were very awkward

ward to stack up on a grocer's shelves.

Plastics seemed to hold the answer to Pitt's problem, even though a specific material that would be suited to the company's requirements did not appear to be available. Acetate was discarded as not being a sufficient barrier to moisture; polystyrene was thought to be too prone to breakage; other plastics were not rigid enough, not transparent enough or not cheap enough. Then, after many months of research and consultation with the package molder came the suggestion: rigid vinyl.

This material has, in the past, had only very limited use in the packaging of food in rigid containers. However, the obvious advantages of Pitt's new vinyl packages could conceivably alter that picture somewhat. The vinyl resins used to mold the containers were specially formulated to make them non-toxic and to eliminate the only drawback discovered in the first experimental packages: a tendency for the plastic to get brittle and crack, especially at low temperatures.

The basic properties of this vinyl were just what Pitt had been looking

for. It is completely transparent. It makes containers that are tough and rugged, and can be stacked up in as tall a pile as any grocer may want. It gives good moisture protection. It is light in weight. It permits a simple, tight form of reclosure. And it is not expensive: Pitt says it has found, happily, that its new rigid vinyl containers cost less than glass jars.

The 4-oz. container is a flat tray about 1 in. deep, with slightly rounded corners, made by a special molding process. Ridges are molded into the side walls to give added rigidity.

Each container is equipped with a tightly fitting, rim-fit lid. This has a narrow groove running around the perimeter into which the top edge of the base section is snapped. A certain

amount of pressure is needed to remove the top when the package is to be opened, but it can be easily reclosed to keep the unused fruit in good condition for future use.

Printing takes up only a small portion of the top surface. "Pitt's Conserved Fruits" in white and blue or black silk-screen lettering is highlighted, accompanied by the name of the particular product in white and a small white price spot.

Pitt could not find any standard equipment which could automatically fill and cap these new plastic containers, so proceeded to develop its own. An automatic filler, designed and built in Pitt's plant, uses a hopper and expanded screw arrangement to load the boxes at a rate of 20 to 30 per minute, with much higher speeds said

to be possible. A specially designed capping machine also was constructed to fit the lids onto base sections automatically after they have been filled.

In the short time that these new rigid vinyl containers have been on the market, customer acceptance has been very satisfactory, say Pitt executives. And, they add, the keeping properties of vinyl are "very close to those of glass." Until the final results are in, Pitt is still packing most of its conserved fruits in the old-style glass jars, but in the not-too-distant future, it predicts, rigid vinyl may be getting it all.

CREDITS: Rigid vinyl containers molded by Hedwin Corp., 1600 Roland Heights Ave., Baltimore 11, using "Geon" vinyl supplied by the B. F. Goodrich Chemical Co., 324 Rose Bldg., Cleveland 15.

PACKAGE

It makes its bow in a molded two-piece container which appears to meet all the requirements for Pitt's conserved fruits

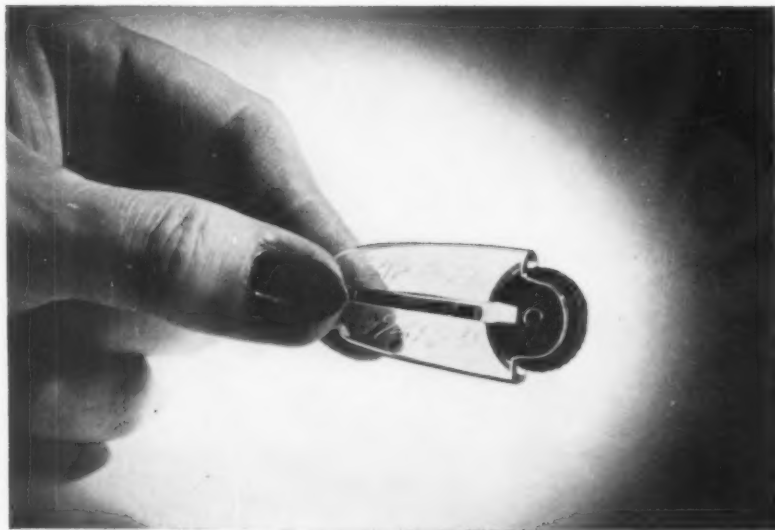


ATTRACTIVENESS of the product in full view in the lightweight, non-shattering container is a big sales puller. It is a stand-out in the "baking needs" section of the supermarket. Pitt uses it for a dozen different fruits.

LID FITS SNUGLY over snap rim, but is easily removed because of slight flexibility of the plastic. Adequate moisture protection is achieved, company says, for long shelf and use life. Note stacking feature of container.

SUCCESS STORY

Zippo gambled on a tricky molded plastic package for flints
and after three years finds sales still running 40% higher



SLOT IN THE WHEEL does the trick. Six flints are lined up in the interior channel of transparent plastic section of the "Zip-A-Flints." Red dispensing wheel is illustrated here in position to receive one.

Is a new and more convenient package worth the trouble? For a packager whose product is extremely small in size, bothersome to handle, low in dollar volume and, in the past, not likely to stir impulse buying, the answer to this question too often has been "No."

The flint used to produce the spark in a cigaret lighter is that sort of product. It is certainly small—about the size of a pencil lead and only $\frac{3}{16}$ in. long. Flints sell for a little more than two cents apiece. And a flint is hardly something you can beat a customer over the head with: a lighter can use only one of them at a time and that will last as long as a month or more, even with constant use. So a lighter user is not generally expected to buy a supply of flints until he actually needs one.

One company which dared to buck this unpromising situation was the

WHEEL REVOLVES and a single flint emerges, ready to be dropped directly into the lighter. Remaining flints are retained in interior channel. Flints fit any standard-make lighter.



Zippo Mfg. Co., Bradford, Pa., one of the largest makers of cigaret lighters and supplies. Three years ago Zippo invested considerable study, time and money in a molded plastic pocket dispenser package for flints and after three years it is ready to say definitely that the gamble paid off.

Using a red, revolving, slotted wheel to pick an individual flint from a channel in the transparent case and deposit it in the lighter, the dispenser package—shaped something like an arrowhead—has so impressed smokers with its good design and intriguing function that it has been not only a booster for the sale of flints, but a powerful promoter of the Zippo name wherever it goes.

During the first year in which this new flint dispenser was on the market, Zippo's flint sales jumped up 38%. And since then sales have maintained that same solid pace, demonstrating that the initial increase cannot be attributed to novelty value alone. Currently, sales of flints are said to be running 40% higher than they were before the new package was introduced. But the remarkable feature of the sales record is the fact that Zippo, during this time, has not spent one cent on consumer advertising to promote the flints in their new dress. The package itself—winning impulse sales on tobacco counters and bringing back satisfied customers—has done the job.

The "Zip-A-Flint" is a two-piece molded plastic container, simple in construction, but ingenious in the way in which it stores and dispenses a very difficult-to-handle item. It is, naturally, far more expensive to produce than the rudimentary packaging formerly used. But Zippo executives are convinced that the fine marketplace results which the Zip-A-Flint has achieved and the good impression it makes for the Zippo brand name more than make up for the extra cost involved.

Formerly, the flints had been packaged in simple square glassine envelopes, priced at four for 10 cents. By existing standards, this was a reasonably good package, allowing a certain amount of product visibility and plenty of room for printed copy. But there were one or two serious disadvantages.

It was a rather awkward procedure for the user to probe around inside the envelope with thumb and forefinger for the elusive little flint and

then fit it into the proper hole in his lighter. And the envelopes themselves could be displayed in the store only by stapling a number of them onto a counter card. Thus, as each envelope was sold, it had to be torn off the display card and the ripped-open edge folded over. This was, to say the least, not a very neat package.

So Zippo decided that a change was in order. It was felt that the best way to sell the flints in larger quantities would be to make the package itself the major selling tool and the company set up a list of five specific objectives for a radically new flint container. These were:

- A better carrier of flints
- A visible flint supply
- A stimulant to salesmen
- A novel, convenient item with consumer appeal
- A package that would do at least one thing that no other flint package would do.

The last of these, quite naturally, was the hardest to accomplish. After much thought and experiment, the answer evolved by Walter R. Avis, at that time Zippo's advertising manager, working with a supplier, was to design a package that would feed flints directly into the lighter itself, eliminating all fumbling and groping.

With this as the basic packaging objective, the hard work of putting the idea into actual operation began. Dummy models of a large number of suggested dispenser packages were assembled. Patent attorneys were consulted. A name was selected. Dimensions of the selected design were carefully engineered. Filling methods were studied.

All these details having been ironed out, the final all-plastic dispenser emerged. Roughly 2 in. long and 1 in. wide, it consists of two pieces: a rounded, tapering, transparent polystyrene body that has a narrow slot running down its center just large enough to hold six flints laid end to end; and a bright red polyethylene wheel which snaps into the large end of the body section and has a tiny radial slot into which a single flint will fit.

Holding the dispenser in his hand, the user can turn the wheel with his thumb so that the two slots meet each other, then give the package a slight shake. This causes one flint to move from the long slot in the body into the slot in the wheel. Another movement of the thumb revolves the wheel and the flint can be dropped out of

the slot directly into position in the lighter.

This done, the wheel is left as it is, thus preventing any of the other flints from falling out of their slots. A small hole punched in one end of the base of the dispenser makes it possible to link it onto a key chain so that it will be at hand when the next flint-replacement time occurs.

Two different display containers have been supplied to dealers for the Zip-A-Flints, each attractively printed in black, red and yellow. A stand-up display card for use on tobacco counters has slots into which 24 dis-



"SERVE YOURSELF" appeal of bright yellow, red and black counter-display card is key to merchandising success. Gadget-loving Americans seem to find the little plastic dispenser irresistible. Its success was immediate and sustained with no other form of consumer advertising.

pensers are inserted. These may then be easily removed by customers. If less space is available, Zippo also has a compact display carton which holds 24 Zip-A-Flints, for use on a cash-register rim or similar spot.

Both these units help add impulse sales for the flints. But the big selling job is being done by Zippo's clever little package which, all at once, displays, protects and dispenses them.

CREDITS: Plastic dispenser packages molded by Sterling Molders, Inc., 277 Military Rd., Buffalo 7, N. Y. Display card by Rochester Folding Box Co., Box-art St., Rochester, N. Y.

Keeping up with baby



PHOTOS COURTESY ALAN BERNI & ASSOCIATES

AT A GLANCE, shoppers and sales people can distinguish the various styles of baby pants by printed emphasis on cartons. Playing-block symbol becomes functional as a window for visual inspection of contents. Baby illustrations add human interest.

Ten years ago the I. B. Kleinert Co., New York, redesigned its complete line of infants'-wear packages, covering several dozen items in various sizes and quantities. In 1945 this was considered a significant step, for it brought together a large family of heterogeneous packages, each of which had been pretty good on its own, but lacking over-all relationship for quick brand recognition.*

At that time manufacturers were

* See "It's for Baby," *MODERN PACKAGING*, Aug., 1945, p. 104.

only beginning to sense the package changes that would be necessary to keep up with revolutionary merchandising trends. Kleinert was ahead of its time.

Kleinert again has acted well ahead of its competitors in redesigning its baby line in accordance with today's sharpened packaging techniques necessitated by the extension of self service to almost every phase of retailing. The new redesign program is one more example of what marketers of even the most time-honored brands

must do to review periodically their package designs and re-gear them to new shopping trends.

Recently it became apparent to Kleinert that the packaging of 10 years ago was no longer in step with new products and innovations in its line. The company also felt that its package designs, while expressing quality, lacked strength for today's harder counter selling.

Kleinert's 1945 packaging policy was based on a concept of (1) a basic package for the entire baby-pants line and (2) a basic package for the crib-sheet line. Today Kleinert's baby line includes eight types of baby pants and four types of crib sheets. Each must be unmistakably distinguished for shopper and salesperson.

And whereas a relatively small line of type, such as "Rayon Softex Baby Pants" or "Quilted Rubber Sheet," sufficed to designate the various products 10 years ago, a package that was visually the same except for a small line of product description presented serious sales handicaps today, because:

1. It was confusing to the shopper and slowed the sales operation.
2. It failed to point up the wide selection of styles and materials available to the customer.
3. It hampered retailer handling and stockkeeping.
4. It lacked the human-interest appeal of pictures of babies, which Kleinert has discovered is nearly indispensable today on infants'-wear packages.

Kleinert commissioned a leading package designer to revamp the line. With its present stepped-up packaging, the company believes it has overcome its handicaps.

An emboldened logotype emphasizes the maker and brand name. Each style in both baby-pants and crib-sheet lines is color coded for style and materials. Product names and product performance are presented in more arresting lettering on contrasting backgrounds.

At the same time, customer recognition has not been jeopardized by the packaging change-over. The new de-

After 10 years, Kleinert finds merchandising conditions so changed that a complete redesign of baby-goods line is in order

sign theme features the original playing-block motif, but has been treated with what the company believes is greater visual advantage. And the traditional baby pastels have been retained, but given greater intensity and clarity.

While the playing-block decor still appears in an all-over pattern on the crib-sheet packages, it is used only as a highlight motif on the baby-pants packages. Three of the baby-pants packages have as their dominant design feature a large playing block. The top of this is a window that provides the visual inspection of product so much demanded for soft-goods packaging. The fourth, or Jiffy Pants, package differs in that its dominant design feature is a broad panel simulating a row of huge blocks. This panel serves as a backdrop for product information and selling message. It also provides a frame for a diagram illustrating details of the garment. The oversized block motif, repeated in the upper left-hand corner, accentuates the logotype and directs the eye to the product name and the particular fabric of which the garment is made.

Identifying code colors and product name appear not only on the front, back and sides, but also on the bottom panel and on the top or closure panel. Thus the garments can be identified swiftly from any angle.

To provide human interest, the designer created a trade character—"the happy Kleinert infant"—which appears on all packages in the baby-pants and crib-sheet lines. The development and successful incorporation of the trade character (along with the design innovations) resulted through the cooperation of Roy Clayfield, executive director of Kleinert's Infants Products Department, and Virginia MacAuley, the company's advertising manager.

The major advantage of each product is now presented in pertinent form on the face of the package. On the Silk Softex package, the front panel of the playing-block motif is used to dramatize the waterproof (without rubber) characteristic of this product, which is washing-machine washable. The Jiffy Pants package



CONTINUITY OF BRAND is retained by keeping the distinctive playing-block motif, but now descriptive panels on the crib-sheet packages focus attention on the different types of product and materials. Each package is color coded for further quick identification of the contents.

tells the shopper she need only "change the pad—not the pants" and "no pins—adjust with fasteners."

On the crib-sheet packages, the product story shares the same dominant panel with maker and product name. The customer discovers in the quickest glance that Kleinert's Dry-Downe Crib Sheet is soft, absorbent and may be washed in a washing machine. In other words, the special convenience and advantages of the product share top billing with manufacturer's name and product name. The customer does not have to search out this information from a mass of fine printing or peer into the box for an explanatory folder. Reverse sides of both baby-pants and crib-sheet packages are used to elaborate on the sales message and product performance story.

One of Kleinert's objectives was maximum display in a minimum of space. While there is a reduction of 35% in package size, the new designs (This article continued on page 187)



REVOLVING DISPLAY holds 4-doz. baby pants. Each section has a panel featuring garment size and advantages. Bottom reads, "for other sizes turn display."

Sporting goods



PROTECTION and visibility with tear-tape convenience is found in U. S. Royal golf balls, each individually sealed until use in sphere of vacuum-formed acetate and then linked together in strips of three.

PHOTO COURTESY MILPRINT, INC.

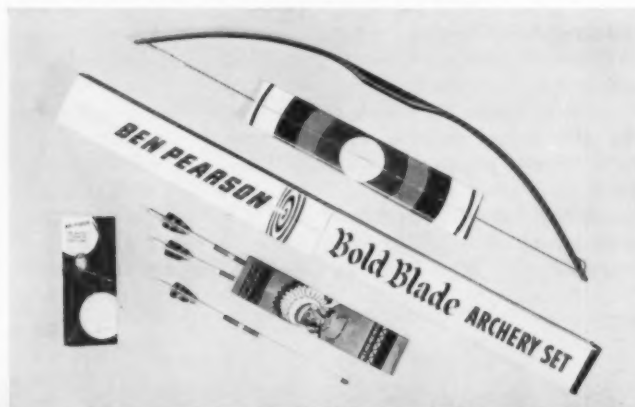


THE COMPLETE KIT packaging idea has been a big factor in attracting millions to fishing and other sports. This Garcia Spinning Kit for the fisherman won three awards in the recent Folding Box Competition.

FOR THE WOODSMAN, Marble Arms Corp. uses a north woods scene and sturdy platform box with a sleeve, like this accessory kit, for gift appeal.



FOR THE ARCHER, a well designed kit package complete with instruction book, such as this Ben Pearson Bold Blade Archery Set, is instrumental in drawing young fans to the sport.



America's steadily increasing amount of leisure time is proving to be a bonanza for the sporting-goods manufacturer. Shorter work-weeks and longer weekends are reflected in more free hours for additional millions to follow their favorite sports and hobbies.

Most sports require some type of equipment and most types of equipment must be packaged for most effective sales presentation and consumer convenience. The packaging problems of a canoe may be considerably more complex than those of golf tees, but manufacturers of both items appreciate the role of proper packaging in getting the product to the buyer in first-class condition.

The so-called leisure market has been described as a "\$30-billion plum, ripe and ready for plucking." This includes, of course, not only expenditures for sporting goods, but money invested in travel, attending sporting events, buying hobby and gardening supplies, and following the many "do-it-yourself" activities which have burgeoned in recent years.

An important major trend, as pointed out in a recent issue of *Tide*, is the decline in attendance at spectator sports and the accompanying increase in participant sports. For example, hunting licenses issued in 1954 hit a new high of 14,800,000. During the same period, more than 17,600,000 Americans bought fishing licenses, emphasizing the dominance of angling as the nation's favorite participant sports activity.

U. S. residents, with more autos and greater mobility than ever before,

This growing billion-dollar industry is getting its share of leisure-time money with packaging that tells and sells



are no longer content to sit idly and watch somebody else engage in sports. They want to get in the act themselves; and with their free time now amounting on the average, to more than 2,200 hrs., or 93 days, per year, they are able to do something about it. Figures compiled by the National Sporting Goods Assn. indicate that total consumer purchases of sporting goods in 1953 reached approximately \$1,100,000,000, a 10% increase over the previous year. These totals compare with sales of slightly over \$300 million in 1929, a low point of less than \$200 million in depression-ridden 1932 and 1933, and approximately \$450 million in 1945.

The increase in leisure-time pursuits carries important implications for packaging. It means, among other things, that more people than ever are in the market for all types of sporting goods. Sporting-goods manufacturers, not unmindful of how convenient, functional packaging and self-service merchandising have revolutionized many other types of selling in recent years, are going along with the trend. Smart packaging, with the emphasis on use appeal ("sell the sizzle instead of the steak"), buyer convenience, self-selling informative labeling and efficient storage and protection of the

product following purchase, is becoming a vital force in the entire sporting-goods field.

A field of special problems

The range of products included in the general term "sporting goods" is so broad that few universal packaging rules can be applied. Obviously, "high-ticket" items such as a matched set of golf clubs or an expensive fly rod require more highly specialized and costly packaging than a youth's softball or a pair of boxing gloves. However, the interest in improved packaging for sporting goods appears to bracket all types of products and all price ranges. As a result, a wide variety of packaging materials and package forms are called upon to meet the industry's requirements. With certain exceptions, however, most of the industry's packaging operations are handled on a manual or at most a semi-automatic basis, since most sporting-goods items do not lend themselves to the high degree of packaging mechanization found in the food field and numerous other industries.

Until recently, most sporting-goods packaging was strictly functional, with little or no regard for surface design, sales appeal, consumer con-

venience or information. In many instances, a nondescript chipboard box was used. The customer probably never saw the box until the clerk drew it out from behind the counter or off the shelf. Window-style cartons were virtually unknown. In comparison with the present practice of utilizing the package surface for information concerning the product and its use, this type of information was customarily confined to a printed sheet inside the container.

According to Bureau of Census figures, sporting goods are sold through some 8,000 retail outlets in the U. S. This figure includes not only the type of store which handles sporting goods exclusively, but also those which have a sporting-goods department or at least include some sports items along with their other types of stock. Today's customer is no longer surprised to find sporting goods for sale in a supermarket or drug store. Hardware stores and hobby shops are other important outlets for some types of sporting-goods equipment. The fact that such merchandise is now available through a wide variety of retail outlets not only helps to stimulate consumer purchases of sporting goods, but also has made it imperative for manufacturers to

FOR THE BOWLER, Brunswick provides sturdy, cleverly designed corrugated carry carton, shipped flat to dealer, for its Fireball. It serves as a permanent carrier for the ball.



FOR TABLE TENNIS, Wilson "Reminder Grip" bat sets come in brilliantly colored boxes which can double as display pieces.



keep their packaging and sales techniques sufficiently flexible to fit all mediums and competitive with other kinds of merchandise.

Since most types of sporting goods are relatively sturdy, protection against physical damage seldom presents any particular packaging problem. However, items must be protected against excessive handling, as well as dust and other types of soil, if they are to remain in salable condition. Accordingly, the greatly increased use of transparent wraps and packages, window boxes and other types of containers permitting visual examination of the product without removal from the package marks a major trend in the sporting-goods field.

Of course, there are some types of sporting-goods items which do require special protective measures in order to preserve their original quality until they reach the consumer. Live fishing worms have been successfully merchandised in ventilated molded plastic boxes and other types of containers, using an inner packing of moss or similar material. Tennis balls for a number of years have been sold in units of three in vacuum-packed metal containers which protect them against loss of their original lively "bounce." This highly successful package, used by a number of leading manufacturers, maintains the balls in a 28-lb. atmosphere which matches the pressure within the balls themselves.

Without question, one of the principal packaging trends to appear in the sporting-goods field in recent years is the use of "kit" type packaging, in which related items are assembled into a single sales unit. This sales approach, based on the logical premise that a helmet goes with a football, a bat and ball with a baseball glove, and a reel, line and lures with a fishing rod, gives the manufacturer an opportunity to do a really effective packaging job.

The fact that two or more products will be placed in the package creates the need for a larger package which can be displayed to greater advantage in the retail outlet. Increased package area permits greater design freedom and more room for sales-stimulating illustrations and copy.

Sets of golf clubs, archery sets, table-tennis and badminton sets are among the more obvious types of

sporting-goods equipment which lend themselves to the popular kit type of packaging.

Somewhat more recent is the practice, by some manufacturers, of grouping together in a single package a basketball and a folding goal, a baseball and a glove, or a football and a helmet. Swimming fins, goggles and a "snorkel" underwater breathing device, combined in a single container bearing an appropriate aquatic design, follow the same logical packaging approach.

For the fisherman

Among the most interesting examples of kit packaging in the sports-equipment field are those developed by fishing-tackle manufacturers. Packages in this field are particularly effective because many of the products themselves, such as colorful artificial lures, lend themselves to attractive display within the container. Fishing kits may be as elaborate or as

simple as the manufacturer desires, depending upon the number of items to be included, the value of each component and the total sales price of the complete outfit.

Since experienced sportsmen prefer to choose their equipment on an item-by-item basis, the appeal of the kit-type package is primarily to the neophyte—regardless of age—who is just getting into the sport and requires several basic pieces of equipment. Having passed the cane-pole-and-bobber stage, he is ready for a more advanced type of fishing. This ushers him into a new and strange world where the experts talk knowingly of wet flies, dry flies, bait casting, spinning, backlash and monofilament lines. Thus it is only natural that he should turn to a pre-selected, pre-packaged assortment of related items.

Among the companies doing an outstanding job on fishing kits is Charles Garcia & Co., Inc., New York.

Fishing supplies



PERFECT SALESMAN for an intriguing product is this die-cut folding carton for Fly-Bank, a molded-plastic clip-on container for flies. Picture and copy on back are attuned to dyed-in-the-wool fishermen. Two die-cut openings, in front and on top of the carton, invite the shopper to turn the dial and see how the revolving sheep's-wool belt permits him to "dial a fly" with the use of only one hand.

Garcia's Mitchell CAP Spinette fishing kit won triple merit awards in the 1955 folding carton competition sponsored by the Folding Paper Box Assn. of America. This carton, printed letterpress in orange and black on white stock, is so constructed that the two-piece fishing rod, spinning reel, plugs and various baits, as well as line and line dressing, may be fastened to the base of the box to facilitate good display, as well as to protect the merchandise. The distinctive Garcia logotype, within a fish silhouette outline, is repeated along the sides of the box as a main element of the design.

The kind of package thinking that pervades the sporting-goods field today is expressed by R. L. Witt, advertising and sales promotion manager of the South Bend Bait Co., one of the largest general-line producers of fishing tackle.

"We have aimed at a family of packages," says Mr. Witt, "that will

afford the most effective display and self-service potential in the sporting-goods outlet. In any store, the South Bend line will be invitingly recognized by the customer and the job of serving that customer will be as convenient from the salesman's point of view as we can make it."

Folding cartons, counter displays, plastic tubes, set-up cartons, corrugated boxes and molded plastic containers are among the packaging forms employed by South Bend for its broad line. Special gift assortments have been developed as an added sales wedge for the dealer. Here package appeal takes on increased importance because many fishing-tackle assortments are sold directly to women. Accordingly, South Bend developed a whole series of kits, one for each type of fishing. Reel kits, which include the reel, line, lures and a stringer, are packaged in set-up gift boxes with a wood-grain finish and the full-color illustration of a rainbow

trout on the inside surface of the cover. For the more-inclusive kits, three basic corrugated packages having a standard design are used to accommodate the various rod lengths. A variety of seven different package inserts is available, each of which is die cut to hold a series of balanced tackle.

Impulse buying of lines and lures plays a role of ever-increasing importance wherever fishing tackle is sold. South Bend's program incorporates a number of self-service merchandisers which aid the consumer and dealer alike.

Typical of this approach is a revolving display designed especially for the company's Deceiver nylon monofilament line. This unit holds a total of 4,800 yds. of line, put up in convenient molded plastic boxes having two connected 100-yd. spools in each box. An exclusive feature of the boxes is a small opening in the lid. With this style of "Twist-Free Pak," the line is fed onto the reel through the hole in the lid, automatically neutralizing twist put in the line by the reel, thereby eliminating the need for costly winders.

Molded plastic boxes, because of their re-use utility to fishermen, have become practically standard for high-quality fishing lines throughout the industry.

While easel displays of fishing lures are not new to the tackle trade, South Bend's colorful new self-service easel displays for metal lures are unusual. Each easel contains a dozen lures, individually packed in a transparent plastic tube with instructions. Standard in size and shape, the easels are lithographed in three colors. Most metal lures come in a variety of sizes for different types of fishing; thus the diameter and length of the plastic tubes must vary according to lure size. To package these sizes on the standard background easel card, special die-cut card-stock tube holders were developed, each holding a dozen of the tubed lures. In production, the packers merely staple the tube holders to the standard background easel card. Back-up or refill stocks of lures are packed one dozen to a counter display carton.

The Weber Lifelike Fly Co., Stevens Point, Wis., makes use of the product-visibility approach in a number of its packages. The company's standard package for a dozen single-wing dry flies is a transparent molded

make wide use of plastics



NO DANGER of hooked fingers when hooks are kept in compact molded plastic box that sells Wright & McGill hooks from this counter display.

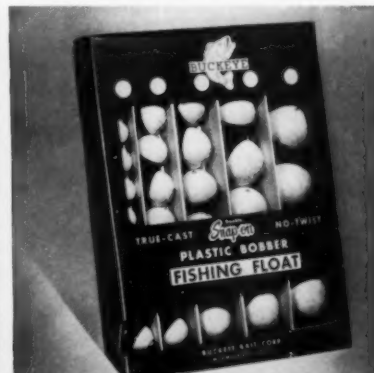


PLASTIC VIAL with polyethylene stopper makes permanent container for lure. Ease of examination on easel display card promotes sales.

AMUSING DISPLAY catches the eye. "Fish line" of real string suspends any one of the eight Uncle Josh bait products being featured by the dealer.



DISPENSING carton for Buckeye floats, which may be set up on counter or hung on wall, won an award in 1955 Folding Carton Competition.





TWO BASIC TRENDS in sporting-goods packaging are illustrated here. Left, the "set" idea, encouraging purchase of both football and helmet in a single window carton. Right, the compact, informative counter display. Note molded plastic box for lines.



RELATED GOODS are displayed together in Sears, Roebuck stores. Sears packages its own brands of a wide variety of sporting goods and is one of the largest retailers of these products in the country.

plastic box having a novel card which makes it possible to see the size and pattern of the flies from straight above or when looking at an angle from the front. Twelve of these boxes, measuring 2½ in. square by 1 in. deep, are grouped on a display tray in the store.

Another major supplier of fishing tackle which has the problem of packaging small items for effective display and sales appeal is Wright & McGill Co., Denver, Col. For its nylon monofilament spinning line and leader material, this company makes use of formed cellulose acetate wheels having a "no-tangle" feature. The construction of the wheels, which permits the line to feed out the edge slot between the two halves as it is unwound, permits transfer of the line to the reel without twisting. The wheels are supplied in several sizes of display units, holding from two to 18 individual packages.

For the packaging of fishing hooks, Wright & McGill Co. utilizes molded plastic boxes with lift-off tops, which hold 10 of the smaller-sized or eight of the larger-sized hooks. This permanent, pocket-sized package is sufficiently sturdy to be carried in the angler's tackle box, where it finds many re-use assignments.

Two packaging approaches for round bobbers, or floats, utilizing different materials, are illustrated by counter-display units adopted by Dayton Bait Co., Dayton, Ohio, and Buckeye Bait Corp., Miamisburg, Ohio.

The Dayton float display, vacuum formed of high-impact polystyrene sheet material, is red, green and white in color and includes a protective

transparent plastic sheet over all but the removable floats in the front (see June issue, p. 129). This construction exposes a large number of the red and white floats to view and helps to stimulate buyer interest. Floats feed by gravity down the curved sections of the unit, with one of each size always ready for removal. The red and white coloring is a decalcomania applied after forming.

The Buckeye Bait Corp. bobber display unit is of folding-carton construction. In switching to this approach from the plastic tubes formerly used, the company attained a sizeable reduction in packaging costs. The economical new-type display has a large transparent window for product visibility, special inserts to separate the floats and a cut-out dispensing area slanted to conform with the various float sizes.

Considerable ingenuity is evident in the packaging and display of specialized products and accessories used by fishermen. The Fly-Bank, a molded plastic container which clips on the pocket or belt and makes it easy to select fishing flies from a wool belt rotated by turning a knob, is attractively packaged in a folding carton having die-cut openings both in the top and the front display panel. This arrangement permits the knob to be turned and the sales features of the item to be seen without removing it from the package.

Uncle Josh Bait Co., Ft. Atkinson, Wis., uses a three-dimensional, four-color counter display with natural, humorous appeal to fishermen to stimulate point-of-purchase sales of its eight types of bait. The letterpress-printed display, measuring about 11½

in. in height, is designed so that the product may be suspended by means of a fish line attached to the fisherman's pole in realistic fashion. The retailer may "bait the line" with the variety best suited to his particular fishing area.

Hunting and archery

Marble Arms Corp., Gladstone, Mich., a leading supplier of such outdoor sports equipment as hunting knives, compasses, waterproof match containers and gun-cleaning kits, has done an excellent job of product and company identification in the correlated group of packages used for these items. This company makes extensive use of folding cartons, featuring a surface design on the printed sleeve which highlights the firm's oval logotype in conjunction with an appropriate north woods scene in which several types of game are included. Individual items are held securely in place by die-cut openings in the base portion of the packages.

Related items, such as a knife, compass and match box, are combined in Marble's Sportsman's Kits. Another Marble package—a revolver-cleaning kit—includes a cleaning tool, a supply of gun-cleaning patches and a can of nitro solvent oil, packed in a folding carton having die-cut openings in the front display panel through which the separate items may be seen and examined.

One of Marble's newest and most interesting packages is that used for its Kleen Easy Cloth Kit. This is an attractively printed polyethylene envelope which contains two types of cloths making up the kit—one for re-

moving rust, corrosion and tarnish from metal surfaces and the other for preventing the fingerprinting, rusting and corrosion of similar surfaces. The latter cloth, which occupies most of the space within the plastic envelope, is separated from the rust-remover cloth by a heat-sealed seam near one end which divides the package into two sections. The individual packages are merchandised in retail outlets from a folding paperboard counter display carton.

Crosman Arms Co., Inc., Fairport, N. Y., has made extensive use of the kit approach in packaging its CO₂- and air-powered rifles and pistols. These packages, which include such items as the gun itself, pellets, instruction manual and a supply of targets, are designed for effective display in the store, with eye-catching illustrations and sales features printed directly on the inner face of the lift-up top panel. Some have an integral folding handle.

For its Rust-Pruf storage pouches used on rifles, shotguns and pistols, The Hood Co., Los Angeles, utilizes individual folding cartons, packed one dozen in a folding counter display or shelf box. Since the polyethylene pouches, which are used in conjunction with volatile corrosion inhibitor paper, do not lend themselves to convenient display unless removed from the package and unfolded, the individual cartons carry an illustration of a gun within one of the pouches, along with full information on its sales features and use.

Many suppliers of bows and arrows and related archery equipment are doing an outstanding merchandising job with attractively designed kit-



TENNIS AND GOLF are still among the biggest active-participation sports, appealing to all ages and to both sexes. These Spalding packages for tennis and golf balls—a big-volume item for the sports store—are time-proven. Tennis balls (left) are hermetically “canned” to keep them fresh.



type packages. Ben Pearson, Inc., Pine Bluff, Ark., is among the leading suppliers of such equipment who have given special attention to well designed and constructed packages. Individual cartons used for packaging the various sets attain unmistakable family relationship through the use of the Ben Pearson logotype, with its distinctive arrow and target symbol, supplemented by the name of the particular set—Junior Champion, Cock Robin, Champion, Collegian, etc. Ben Pearson arrows are shipped and displayed in a sturdy corrugated container which is ready to be placed on the sporting-goods store counter as soon as the telescoping top has been lifted off. Within the container, the arrows are supported in a vertical po-

sition by means of a perforated base platform and a similarly perforated collar through which the shafts pass.

Golf supplies

Golf balls, a high-volume sporting-goods item, have been the object of much packaging ingenuity recently. To facilitate the sales job, it is a common practice to combine several balls in some type of over-all wrap or package.

Most typical of golf-ball packaging is a specially constructed folding carton used by Spalding for its Spalding Dot and Air-Flite golf balls. These cartons consist of a full-telescoping body and cover, the former having a double-wall construction for added strength and rigidity. Within the cartons, which hold a dozen balls, the balls are in units of three within printed cellophane wrappers.

United States Rubber Co. has been an outstanding pioneer in functional and appealing plastic packaging for golf balls. With its acetate spheres that individually seal U. S. Royal golf balls in strips of three, introduced in June, 1953¹, U. S. was one of the earliest big users of vacuum-formed plastics in packaging. These spheres now incorporate a colored plastic tape for easy opening. Later in 1953, U. S. introduced its two-piece polystyrene gift container² for a

¹ See “Golf Balls in Contoured Plastic,” MODERN PACKAGING, June, 1953, p. 120.
² See “Design Histories,” MODERN PACKAGING, Sept., 1953, p. 113.



PICTORIAL ‘SELL’ is relatively new in sporting-goods packaging. Picture on this roller-skates package sells skating as a joyful sport and shows that these are professional-type skates, not for children.

Design



Cheese case splits in two

Split-case orders of the blue cheese sold by Treasure Cave, Inc., Faribault, Minn., can be taken care of easily with this shipping carton. Designed to hold 10 dozen 4-oz. packages of cheese, it is actually a master container in which are nested 10 interior corrugated shipping units. Each of these holds a dozen small packages, arranged in two layers of six, protected by double-thickness walls and sealed with pressure-sensitive tape.

The 10 units in a case are arranged in two rows of five each inside the master container, which has a patented "Pull-Tab" tear tape to make it a simple matter to divide the large case into two half-cases. Each of these will then hold five of the 10-package units, arranged vertically.

Printed copy on the outer surface of the master container is duplicated on either end, so that full information appears on each open-top half of the case when the wholesaler fills orders for split-case shipments to the retailer.

CREDIT: Container designed and produced by Waldorf Paper Products Co., St. Paul, Minn.

Jelly in collector-set, iced-drink tumblers



C. H. Musselman Co., Biglerville, Pa., is now packaging five different varieties of apple jelly in tall, table-type tumblers, especially designed for serving iced drinks in the summertime. An interesting pattern of leaves, done entirely in a frosty-white color is intertwined around the surface of each of the tumblers, standing out in sharp contrast to the dark jelly.

Copy on both the top and sides of the metal caps urges housewives to buy an assortment of glasses, saying, "Enjoy real, homestyle jellies . . . and collect a set of these beautiful 'Lacy Shade Design' iced drink glasses." Musselman packs 1 lb. 3 oz. of either apple blackberry, apple raspberry, apple cherry, apple grape or plain apple jelly in the tumblers.

CREDITS: Tumblers by Hazel-Atlas Glass Co., Wheeling, W. Va. Metal closures by Anchor-Hocking Glass Corp., Lancaster, Ohio. Labels by Piedmont Label Co., Inc., Bedford, Va.

Histories

Hams in foil baking jackets

Hams wrapped in their own foil baking jackets are now being sold by W. F. Thiele Co., Milwaukee, Wis. Reportedly, this is the first use by a meat packer of unmounted aluminum foil to package hams.

The foil serves two purposes: four-color printed by letterpress, it has a gleaming appearance that contrasts strikingly with the rest of the meat on display in a market and it has value as a re-use item for the housewife who buys the ham. Re-wrapped in the foil and placed in a shallow pan, the ham's natural juices and flavor are sealed in as it bakes and her pan is protected from drippings.

Thiele first wraps the hams in heavy rag-paper liners to retard the flow of grease, since heavy-gauge foil does not absorb moisture or grease and would soon become unsightly if this inner wrapping were not used. The aluminum wrapper, which bears the company's logotype and slogan in color, is added and the wrapped ham tied with cord. To cook a ham, it must be unwrapped, then sealed in the foil alone.

CREDIT: Aluminum foil wrapper by Milprint, Inc., Milwaukee, Wis.



Interlocking nozzles let cans stay right-side up

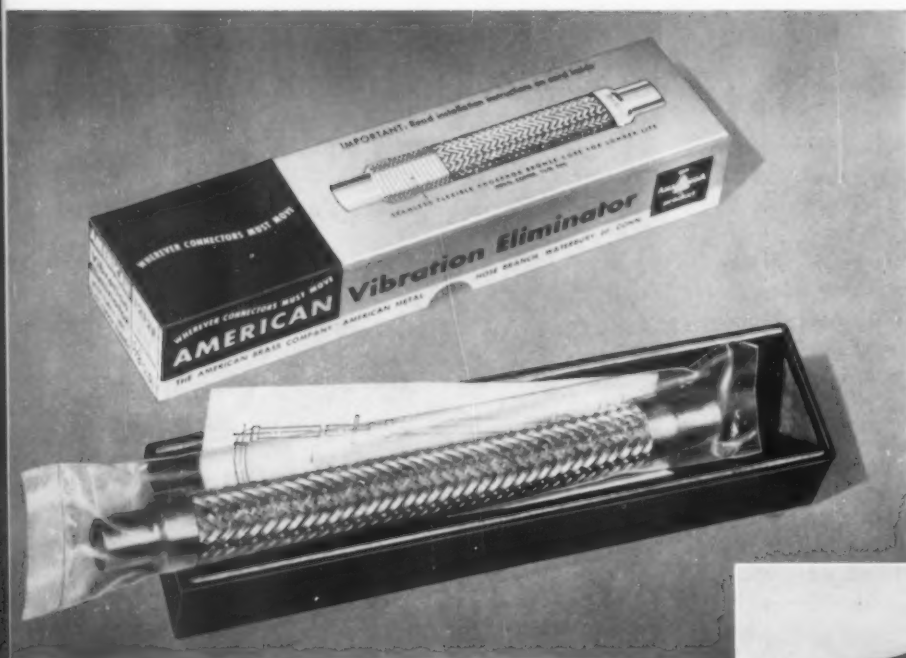
A new version of the familiar oblong F-style can used for chemical specialties has been developed by Boyle-Midway Div., American Home Products Corp., New York. It is designed to improve display techniques, simplify handling on the filling line and reduce total cubic volume of the cans.

Chief feature of the new can is a center nozzle on the top, coupled with a drawn recess in the bottom which registers with the nozzle of a can placed beneath it. A stable stack of cans may be built up by interlocking nozzles and recesses. Using conventional containers, stacks can be made only by placing alternate cans upside down, since the nozzles are placed at one end of the top. Aerowax and Black Flag insecticides now come in these cans.

CREDIT: Cans by Crown Cork & Seal Co., Inc., Can Div., Philadelphia.



New look on the



ORANGE-AND-BLACK box with product illustration gives immediate recognition. Polyethylene bag gives airtight protection both inside and out. There's no struggle to assemble the box. Product is simply placed in box with V-shaped insert, covered, taped, ready for shipment.

THE OLD WAY required capping ends of the product by shrinking on vinyl chloride film to keep the inside clean, attaching the instruction tag with a wire tie, wrapping in corrugated, assembling sleeve, gluing on labels and finally stamping on size by hand.



No longer can industrial products, sold through wholesalers and supply houses, retain their prestige in outmoded packages.

New materials and the ingenuity of today's package design and engineering are bringing new concepts to such packaging. Sales appeal and appearance must be stepped up.

A case in point is a new package for vibration eliminators, an Anaconda product made by the American Brass Co., American Metal Hose Division.

A vibration eliminator is a flexible metal connector used in air conditioning, refrigeration and other piping systems to absorb vibration and to deaden noise. American Brass makes these products in 12 sizes. For years they had been packaged in the same way.

Made of a corrugated seamless flexible phosphor bronze core, the American Vibration Eliminator® is a quality

® Trademark of the American Brass Co.

product and the company wished to emphasize this quality more strongly. One way was to improve the appearance of the package for display in refrigeration and air-conditioning supply houses where the product is sold.

In so doing, the company has not only stepped up appearance effectively, but has provided a package that offers much greater convenience, considerably more protection at no additional cost to the wholesaler.

A drab-looking corrugated sleeve that was difficult and time-consuming to pack has been replaced by a two-piece, set-up telescope box lithographed in two colors—orange and black—that gives immediate identity to the product on the supply-house shelf. The design carries an illustration of the vibration eliminator and calls attention to its specific features.

Inside, the vibration eliminator is completely protected, yet visible in a sealed polyethylene bag. It rests in a

platform insert that keeps it from shifting, the cover of the box exerting pressure that holds it in place.

The efficiency of this package is apparent when it is contrasted with the unattractive appearance and time-consuming steps necessary to package in the old way.

Before the vibration eliminators can be packed they must be put through seven distinct cleaning and finishing operations to make sure that all foreign matter is removed.

Obviously, after these cleaning and drying operations, it is absolutely essential that the product be maintained in this state of cleanliness.

Until the new method of sealing the vibration eliminators in polyethylene bags was adopted, the company laboriously had to seal the ends with vinyl chloride caps, soaked and shrunk to fit. At best, these caps gave protection only to the inside of the tubing. Internal protection is important in that

supply-house shelf

Well-designed set-up box and polyethylene bag bring new appeal to an Anaconda product and eliminate laborious steps in assembly

harmful foreign matter could cause costly down time and maintenance on any refrigeration or air-conditioning system. The polyethylene bag gives airtight protection inside and outside. And outside protection is important from the appearance standpoint because it prevents discoloration of the metal and also keeps particles from lodging in the wire braid and convolutions.

By the old method, after capping, the products had to be individually wrapped in flexible corrugated paper cut to size. A wire with an instruction tag was wound around the product. Then it was necessary to set up the two parts of the corrugated sleeve, place the wrapped item in the inner one and slide the assembly into the outside section. A paste-on label had to be moistened and affixed to the end of the package. In certain cases, sizes had to be stamped on by hand. Finally a body label had to be moistened and affixed to the package.

"And the brown corrugated was not the liveliest background for a body label," says J. J. Doyle, the company's sales promotion manager.

If the product had to be removed from the package for customer examination, it was most difficult to replace it properly in the package.

The new set-up box package with polyethylene bag eliminates all of the old inconveniences. No longer is there need for capping the ends. The cleaned vibration eliminators are simply placed in the pre-fabricated bags and heat sealed airtight and moisture-tight. The bag and its contents are placed in the box with its V-shaped insert, along with an instruction sheet and the lid is put on and taped near the thumb hold to secure top and bottom together.

Label application is eliminated, as the printed box cover carries all of the essential information. Steps in the packaging assembly have been cut down from at least eight to as few as

three or four with the new package.

Not only is the improvement in appearance a striking contrast to the old corrugated sleeve, but the convenience of the new package is greatly welcomed by supply wholesalers and customers. The new boxes immediately identify the brand, size and style. They actually take up less space than the former packages and are said to stack better on the shelves.

The 12 different vibration eliminators, varying in length from 7½ in. to 20½ in., are housed in 11 different-sized boxes; two sizes are packaged in the same-sized box. The boxes for the larger sizes are constructed of heavy kraft fibreboard to carry the weight, while the smaller ones are of vat board and book board. The two-color printing is done in gloss inks

for quality appearance and durability. The package surface was designed by James H. Hobbins, art director for Anaconda.

The new packages were announced to sales forces when the company started making shipments in February and are currently being featured in the company's trade advertising, calling attention to (1) the easy-to-read labels on the orange-and-black package, (2) the sealed protection of the polyethylene bag for the entire assembly, (3) the simplified installation instructions enclosed in the package and (4) the easy removal of the product from the supporting insert.

CREDITS: Boxes constructed and produced by The Clogston Paper Box Co., 102 Hill St., New Haven 9, Conn. Polyethylene bag by Trans-Flex, Inc., Unionville, Conn.

ALL SIZES in the line are now packaged the same way. Fibreboard boxes are used for larger sizes to carry the weight. Instruction sheet is merely slipped into box. Removal from the box is easy.



Polyester film



THIS SUPER-FILM IS

TREMENDOUSLY STRONG

PHOTOS THIS PAGE COURTESY DU PONT.



IMMUNE TO ACIDS, ALKALIS, OILS, SOLVENTS



SO HEAT-AND-WATER PROOF YOU CAN BOIL AN EGG IN IT

Not in years has any new packaging material excited so much anticipatory interest as polyester (Mylar®) film. Fantastically strong, brilliantly clear and with printing and handling qualities generally similar to those of cellophane, it seemed to open new horizons in packaging well beyond the limitations of any existing transparent film.

The anticipation is now changing to realization. Well ahead of the forecasts of a few months ago, there are now at least a dozen products on the market regularly packaged in polyester film; converters and boxmakers have had experience with it in typical packaging applications and a documented report can now be made.

The pioneering applications, which are described and pictured here as a result of a MODERN PACKAGING survey, have one thing in common: they all turned to polyester because of its greater strength and longer life, eliminating a film breakage problem.

Otherwise, the products are as diverse as clothes pins and creme de menthe and the forms in which polyester film is used include wraps, bags and windows in folding cartons, with the window cartons greatly in the majority.

At MODERN PACKAGING's invitation, packagers and converters have not hesitated to speak up about the problems encountered with the new film, as well as its advantages. But it is perhaps significant that none has declined to comment, indicating faith in the material; when a new package is doubtful of continuance, no one likes to talk about it.

Probably the general feeling of satisfaction with the film's present status is due to careful preparation for its coming. Its shortcomings—chiefly problems of static and difficulty of sealing—have caused no disappointments because they were well publicized in advance. Throughout the field, there is a philosophical attitude that these problems can be lived with and that they will in due time be solved, as similar problems have been solved with other new plastic films.

* Trade name of the DuPont Co. for its brand of polyester film. DuPont is at present the only U. S. producer of a polyester film; other companies are reported planning production of similar films.

is here

New material of super-strength and super-clarity, despite high cost and handling problems, finds immediate applications in packaging; here are the first examples

Surprisingly, no one seems much concerned about the relatively high price of polyester film—the one point which had been expected to be the biggest stumbling block. When a small Vermont company is happy to pay the higher cost and change from a cellophane to a polyester bag to market 24 clothes pins, you can be sure that there is no serious price problem.

One user of a window carton reports that the polyester film more than pays for itself in the elimination of returned merchandise due to broken windows. A boxmaker predicts that with some further price reduction the new film will capture virtually the entire window-film market. Many users report savings in various ways which reduce the cost of polyester to a small percentage greater than that of the conventional film previously used.

As a matter of fact there have been two price reductions on polyester film since the first full-scale plant for its production opened last fall, bringing the price of the 100-gauge (1-mil) material down to about \$2.50 per pound—within the range of saran and other top-property films. And, since even 25-gauge polyester film, due to

its unique puncture and tear strength, is better in those respects than most other films of 100 gauge and since 25 gauge yields four times as many square inches per pound, it is a relative bargain at \$4 per pound.

For \$1 you can get 20,000 sq. in. of 25 gauge, 13,300 sq. in. of 50 gauge or 8,000 sq. in. of 100 gauge. Actually, because the still-to-be-solved handling problems are magnified in the very light gauge, all of the packages illustrated here at present use either the 50- or 100-gauge film.

In none of the package uses illustrated here is the film itself printed. But the fact is that it prints beautifully, with good ink adhesion, by either rotogravure or flexographic process, using special inks which various ink manufacturers have developed for it. Now in the final stages of a large-scale test is a direct wrap for one of the leading brands of sheets and pillow cases which has a six-color rotogravure printing job comparable in quality to anything found on cellophane. Most leading converters are prepared to print polyester film if printing is desired.

In general, it may be said that polyester film has fewer problems than did cellophane at this stage of its intro-



ASSURED PROTECTION with a clear view of cup size, style and color is achieved by Lily-Tulip with unbreakable polyester film window in this window carton.

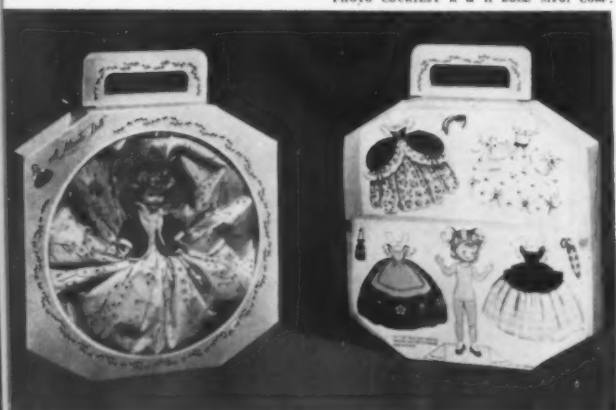
LONG SHELF LIFE and sparkling transparency led Heublein's to adopt this 50-gauge polyester film bag for its bottled cordials, using a wire-plastic twist closure. This film won't dry out and embrittle with age.



PHOTO COURTESY HYGRADE FOLDING BOX CORP.



WINDOW BOXES for Busy Little Mother and Land, Sea 'n Air toy sets make logical use of polyester film's strength, rigidity and clarity. Renwal Mfg. Co. uses 1-mil film in these two boxes and expects it to eliminate the return of damaged merchandise due to breakage of packages.



CARRY CARTON provides a dramatic setting for Marcie costume doll with a big window of polyester film which is immune to poking fingers. Company figures increased cost of the package, using this film, at only 4%.



PUNCTUREPROOF film is essential to visibility packaging of hard, sharp lasagne boards. This wrap is glue sealed, uses insert label. Because of its high melting point (490 deg.) polyester film cannot yet be commercially heat sealed.

duction 31 years ago. Cellophane at that time was not moistureproof, could not be heat sealed, had few machines capable of handling it and—interestingly enough—was at approximately the same \$2.50-per-pound price level as 100-gauge polyester today. Cellophane sells today for as little as 56 cents per pound.

In contrast with the hopeful outlook and immediate acceptance of polyester film, polyethylene, when it was introduced about 10 years ago, moved into the packaging field rather slowly, because of serious problems of printing and sealing. These problems have been solved and there is nothing as serious in the polyester picture.

Physical, chemical and yield properties of polyester film are detailed in a comparative chart elsewhere in this article, but in general these are the qualities which make it attractive:

Strength and durability. The 100-gauge film has a tensile strength of 23,500 lbs. per sq. in., which is one-third that of soft steel, making it by far the strongest plastic film ever made. It has a long flex life and high impact strength and it retains its physical properties, with no apparent change after long aging. It has a service range from minus 80 to plus 300 deg. F.

Good "handle." Even in the thinnest gauges, polyester film does not have the softness and limpness, characteristic of other plastic films, which interfere with machineability. It has about the same rigidity as cellophane.

Transparency. It is truly crystal clear, giving the sparkling appearance which polyethylene lacks. It has a

higher degree of transparency than coated cellophane.

Chemical inertness. It is inert to a wide range of materials and chemicals, contains no plasticizer (hence, no chemical problems in food packaging) and has excellent resistance to solvents, acids, oils, fungi, bacteria.

Dimensional stability. It will not dry out, become embrittled, shrink or stretch, even with extreme aging.

Water-vapor resistance. Although not the highest in this respect, polyester film has sufficient resistance to water-vapor transmission for a very wide range of packaging applications—about the same as polyethylene film of the same thickness. Its moisture absorption rate is extremely low.

Gas permeability. Its transmission of gases and odors is extremely low; for all practical purposes it may be considered gas impermeable.

Converter experience

It is because of its very "hardness" and impenetrability that polyester film is difficult to seal by any method. It has so far defied conventional heat-sealing methods, although experimentation continues with good prospects of success. One converter is successfully fabricating and sealing bags with a special hot-wire process. Most of the bags now in use, however, have special glue-seal seams and the packager's favorite method of closing is with a stapled saddle label.

It should also be noted that, unlike other plastics, this film has such tear strength that it would be practical to form a bag by sewing.

The relatively few complaints that

have been found with regard to bag performance relate to glue seals that do not hold. Special adhesives for polyester are, however, available from several manufacturers. Generally, they are of the resin or latex emulsion type, with such characteristics as high temperature and chemical resistance and complete flexibility. Lacquers, hot melts and rubber cements are also recommended in some cases.

The adhesion of film to film and of the film to paper or paperboard constitute, of course, two separate problems. For film-to-film seals, the film manufacturer recommends that benzyl alcohol plus heat be used; in this process the sealing temperature is very important. One large converter has found it advisable to hold bags under pressure for 48 hrs. to allow the adhesive to set.

Some bagmakers say adhesion is still a problem; others report that they have licked it. But the fact seems to be that a 100% adhesive bond—as strong as the film itself—remains to be found.

Bonding the film to paperboard, as in a window carton, is less of a problem. With the proper adhesive, it can be done on a standard windowing machine in any carton plant. For this purpose, the film manufacturer recommends adhesives based on film formers such as Neoprene, Hycar and buna-N.

It is the fact that it fits rather smoothly into regular production methods that has caused the new film to find its biggest initial use in window cartons—plus the consideration, of course, that the amount of the



RE-USE FOR STORAGE of special-occasion cake ornaments was the feature that attracted Cypress Novelty Corp. to polyester bags. Stapled-on saddle labels promote this feature with copy stating, "Keep this bag!" There is no practical limit to the life of polyester film.

expensive film used in a window is much less than would be required for a complete package.

Although adhesive-sealed bags of 50-gauge and 100-gauge material are now being fabricated on some standard automatic bag-making machines, a good static eliminator is essential. Static is particularly troublesome in the thinner gauges and this probably accounts for the fact that the more-economical 25-gauge film has so far found little acceptance. Static difficulties were mentioned by practically all converters canvassed, but the majority said they had licked the problem, on the heavier gauges at least,

with static-eliminating attachments.

In contrast, it is reported that the automatic window-carton machines require no static eliminators or other adjustments and that knives on these machines cut the film satisfactorily. One-mil is most widely used for windows.

One large film converter lists dulling of the cutting blades on his bag machines as "a very serious problem." This is due to the unusual strength and hardness of the film.

Although rotogravure and flexographic, with special inks, are generally considered the only acceptable methods for printing on polyester film

so far, one converter reports successful letterpress printing with standard oil inks.

Folding-box makers look upon the new film as an opportunity to recoup the window-box business, which has been on the decline for the last few years, due to frequent window breakage permitting contents to be lost and to the shabby appearance of a box with a broken window, leading in many cases to the return of the merchandise to the manufacturer for credit. This has been particularly serious where heavy, hard or sharp objects have been contained; where hard handling has been encountered, as with toys, and where long shelf life is encountered, as the cellulosic films previously used as windows will dry out and embrittle in time.

A long-established New England fabricator of film bags sums up the converter's reaction by stating that, while polyester film does have its problems, these are similar to the original problems with cellophane, acetate, polyethylene and other films, and that the know-how gained in the solving of these past problems will help iron out present difficulties.

Here, company by company, are case histories of some of the pioneering polyester-film packages:

Renwal Mfg. Co.

Renwal's examples show why the toy industry is particularly interested in a stronger film window for window

HOW POLYESTER COMPARES WITH OTHER FILMS*

	YIELD sq. in./lb.	COST 1,000 sq. in.	TENSILE lbs./sq. in.	BURST (Mullen)	TEAR (Elmendorf)	HEAT-SEAL	WVP	GAS PERMEABIL- ITY	DIMENSIONAL CHANGE at high R.H.
POLYESTER FILM (Mylar)	20,000	12.5¢	23,500	45	18	350 [†] -490 [*]	1.8	Very low	None
CELLOPHANE (MSAT)	19,500	3.23¢	7,000 to 16,000	2 to 10	200-300 [*]	0.2 to 1.0	Variable	3 to 5%
ACETATE	22,000	3.23¢ to 3.86¢	7,000 to 12,000	30 to 85	2 to 15	265-450 [*]	25	Medium to high	0.6%
PLIOFILM	24,000	4.58¢	3,500 to 5,000	60 to 1,600	225-275 [*]	1.0 to 1.5	Variable	None
POLYETHYLENE	30,000	2.20¢	1,500 to 3,100	48	75 to 200	230-300 [*]	1.2	High	None
SARAN	16,300	5.82¢	7,000 to 15,000	35	10 to 20	280-300 [*]	0.2	Very low	None

*For purposes of comparison, all data is on basis of 1-mil thickness. Polyester film is frequently used in 1/2- and 1/4-mil thicknesses; polyethylene is generally used in 1 1/2-mil thickness.

[†]Using benzyl alcohol.

**Variances due to differing properties of cast and extruded acetate.



WINDOWS WON'T BREAK despite direct contact with metal parts of slide fasteners. These clever window folders, of folding-box construction, have solved a merchandising problem for Talon home-use fasteners. Polyester film is dimensionally stable; it won't wrinkle or pucker.

cartons. As with most toy items, the Busy Little Mother plastic play set, illustrated, depends for its sales appeal on capturing a child's interest at a glance. This means visibility, as much as possible, but at the same time a rigid box construction.

With previous window films, curious little fingers could poke through the film, disturb the arrangement and leave a broken package from which parts could be lost.

As soon as the polyester film became available, Renwal had a number of test boxes made up, using both 50-gauge and 100-gauge polyester film, for comparison with the 200-gauge acetate then being used. Both gauges of the new film, says Renwal, resisted breakage to a much greater extent than the heavier acetate. The 50-gauge polyester, the box supplier found, was almost as low in cost as the 200 acetate and would have been satisfactory except that it lacked the necessary rigidity for a large two-side window such as this package called for.

Renwal therefore standardized on 100-gauge polyester and is now using it in four of its window boxes, including the Land, Sea 'n Air set also illustrated here.

If the new film proves as effective as the company expects in reducing returns of damaged merchandise, it will extend its use to other boxes requiring large windows. Renwal expects, however, to continue to use acetate for those boxes which have relatively small window openings.

Lily-Tulip

Lily-Tulip Cup Corp. has only recently adopted the polyester film as the window in its window carton for consumer cups and considers it still on an experimental basis. It is impressed, however, with the film's greater strength and clarity.

Paper cups, light in weight and inherently cushioning themselves,

PHOTO COURTESY HYGRADE FOLDING BOX CORP.



STORES INSISTED on windows that couldn't be broken by curious little fingers; hence, Little One's Footwear Co. adopted polyester film for its packages.

would seem to be a product offering no difficulties in any window package. However, a fresh, clean, sanitary look is essential to sales appeal of cups and Lily-Tulip had experienced some breakage of windows in transit and handling.

Because of the change from a heavier-gauge acetate to a lighter-weight polyester film, the increased packaging cost, says Lily-Tulip, has been "negligible."

De Martini macaroni

It is interesting to note that the first food products to adopt polyester film are lasagna boards and macaroni, both of which have had a puncturing problem with other films because of

the hard, sharp ends and edges of these pasta products.

For the Martini brand lasagna boards of the De Martini Macaroni Co., Brooklyn, a polyester-film wrap provides both the full visibility for sales appeal and the protective qualities which they required. This is a simple, hand wrap, with adhesive seals at the two ends. The package is now being redesigned to include a logotype and recipe suggestions printed on the polyester film in place of the paper insert label as in the package illustrated. It may be the first printed polyester package to hit the market.

Talon fasteners

In packaging slide fasteners for home-sewing use, it is essential that the design and color of the metal strip and the sliding closure tab be visible. Yet this metal tab is obviously a menace to any ordinary transparent film.

Talon, Inc., had experienced a great deal of breakage and high resultant cost in crediting and repackaging when their fastener package was overwrapped in cellophane. Then Talon developed a machine which automatically would enfold the fastener in a die-cut sleeve and experimented with an acetate "blister," only to find



A LOW-COST PRODUCT can profit by use of polyester-film bag when breakage and loss are eliminated. Stapled saddle label is customary way of closing these non-heat-sealable bags. National Clothes Pin Co. makes the bags in its own manufacturing plant.

that formation of the blister weakened the film.

When polyester film came along, it promptly was adopted as a window material. The company reports that it not only withstands the pressure of the metal tab without breaking, but does not weaken with age as did both cellophane and acetate.

Along with solving its repacking and credit problems, says Talon, it has considerably lowered both package and labor costs.

Heublein

Inherent strength, the quality look imparted by its smooth, sparkling transparency and long shelf life without becoming dry and brittle were the qualities of polyester film which attracted G. F. Heublein & Bro., Hartford, Conn., to its use as a bag wrap



A PRACTICAL WINDOW is at last provided for macaroni specialties, which demand visibility, but are apt to puncture ordinary films. The Refined Macaroni Co. uses 50-gauge polyester film.

for its creme de menthe and other liqueurs.

Previously, Heublein's only concern had been to protect labels from damage during shipment and a tissue-paper wrapping had been used for that purpose. It was apparent that a transparent film that could continue to protect the label and keep the bottle dust-free throughout its display on the dealer's shelf would be an advantage, but any film that would dry up, crack and tear would be worse than none at all. Polyester film in 50-gauge has proved a satisfactory answer so far.

Heublein's uses pre-fabricated bags sized to fit the various bottles and has improvised a jig to open the bag, overcoming the problem of static which has made this a slow operation. The bag is simply gathered at the top



CONTINUED SALABILITY of Windo-Treat rodless curtains is assured by use of 50-gauge polyester film as carton window. A broken window meant damaged or returned merchandise. Elimination of this justifies higher cost of film, the company says.

and closed with a plastic-wire twist-tie. The only other production problem is that, due to the bag's airtight qualities, cellulose bands used as bottle seals have to be allowed to get their initial shrinkage before the bottles can be placed in the bags.

Heublein's estimates the increase in its packaging cost at approximately 20%.

Cypress cake decorations

The Cypress Novelty Corp., Brooklyn, manufactures fancy and fragile cake ornaments, such as a statuette of a bride and groom for a wedding cake, an infant in a crib for a shower party, a sprinkling can for a garden party.

Its reasons for adopting saddle-labeled, polyester-film bags as packages are sound. These are not items, the company points out, which are sold every day; it had to figure on a package that would give long, dust-proof shelf life with no trouble. Secondly, it felt that the re-use of the bag as a storage container was of great importance, since most brides and grooms, for example, would want to keep the centerpiece as a memento and possibly for re-use on anniversaries.

The polyester film, the company reports, meets these unusual physical requirements perfectly and it is convinced that the higher cost of the film

is fully justified by the service to dealers and the re-use value to the consumer, even though it figures the cost of the bag, at present price levels, at 7½ times the cost of cellophane.

With hand packing, no problems have been experienced in the handling of the bags.

Like several other users, Cypress uses its label to feature prominently the extra value of the film, saying: "Keep this bag! It's made from the miracle film... polyester film. Protect this memento for years to come!"

Rodless Decorations

Rodless Decorations, Inc., New York, has switched to 50-gauge polyester film for the windows of all of the window cartons which it uses for its Windo-Treat rodless curtains and valances. These are items which became unsalable if the window was broken and the company says that with the film previously used there was "a terrific amount of breakage." In polyester film, the company is convinced, it has found the answer to this problem; its packages, regardless of shelf life, are now neat and the curtains clean, fresh and unsoiled.

Although saying that the higher cost of the new film is justified, this company feels that cost is higher than need be. It suggests that if other packagers take up the film and push it up to volume production, the price will come down. It has plans for extending the use of the film to other items in its line which are now packaged in Pliofilm or polyethylene bags.

A & H dolls

This company produces beautiful costume dolls, which depend for their sales appeal on glamorous presentation in octagonal, carry-handle, window cartons. It is now using polyester film regularly as the window material to eliminate breakage in handling and shipping, which previously had been a serious problem.

Package cost, it reports, has been increased only about 4%. No problems have been encountered in the handling of the film and customer experience has been so satisfactory that it is soon to be extended to other dolls in the line.

Julietta macaroni

Like the lasagna boards, macaroni specialties have long been plagued by breakage of windows in cartons. Yet (This article continued on page 170)

QMC's challenge to packaging

New concept of the drop as
a regular method of troop supply
promises to open a whole new
chapter in packaging technology



AIR-DROP METHOD at present requires large and expensive parachutes. Packaging research is now being centered on finding inexpensive cushioning materials that will withstand harder falls.

The Quartermaster Corps has embarked on a huge aerial-delivery program designed to land supplies within arm's reach, as it were, of our fighting men. The program provides a stiff challenge to packaging research and development.

The modern army is a fast-moving force, traveling not only on its stomach, but by every means and mode of transportation known to man. The fighting man must be supplied with three square meals a day. He must have a few comforts to relieve the strenuous grind. He needs ammunition for his rifle and ammunition for the machine guns and light artillery that support him. Gasoline and oil are needed for the trucks and tanks to transport him. Signal equipment is required to maintain communication during attack and defense. Engineering equipment must be brought up to fortify his position.

The Quartermaster Corps has the responsibility for meeting these and other needs of the fighting man. It is charged specifically with establishing and maintaining more effective and efficient means of delivery of the necessities of life during combat. Supply by air drop and air cargo are the two most rapid delivery methods possible. But technical improvements in packaging supplies for aerial delivery are

required in almost every supply classification.

Not everyone realizes it, but air drop is now an alternate to surface transportation. It is no longer just an emergency method of supplying troops. For this reason, the Quartermaster Research & Development Command at Natick, Mass., and the Quartermaster Food & Container Institute at Chicago have expanded the objectives of the aerial-delivery program. They have greatly increased their efforts to further the scope of air drop. The best engineering minds in the nation must be utilized to make this program a success.

Basic requirements

As in any preparation for delivery, it is necessary to develop experimental data in three categories:

- Characteristics of items
- Characteristics of materials
- Environmental factors

Apparently, present techniques and methods used in air supply are satisfactory, but the cost is tremendous. To date, most techniques have been developed by trial and error without recourse to the three requirements listed. If one parachute resulted in damage to the air-dropped item, two were utilized. If 6 in. of cushioning proved inadequate, 12 in. were tried.

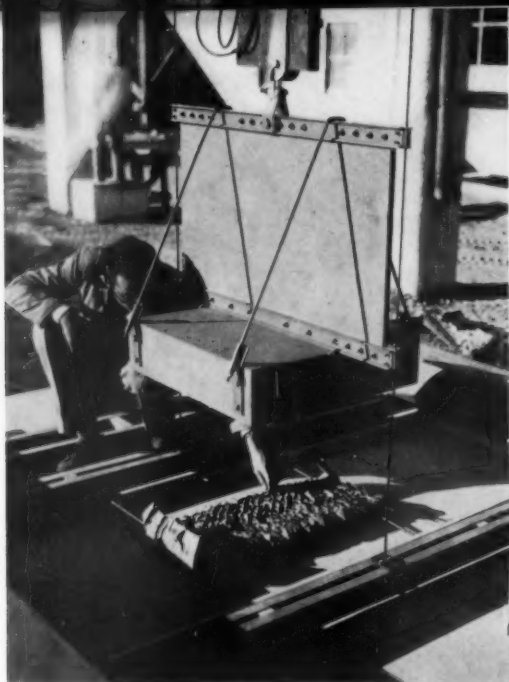
If 12 proved unsatisfactory, additional thicknesses were tested until an acceptable delivery was demonstrated. An engineering approach would assure better answers, faster and cheaper.

Consider these facts:

Virtually all drop techniques are predicated upon a terminal velocity of less than 30 ft. per second. With items such as 105 mm. howitzers, $\frac{1}{4}$ -ton trucks, $2\frac{1}{4}$ -ton trucks, bulldozers, road graders and large unitized loads, clusters of large parachutes are required to limit the drop velocity to 30 ft. per second or lower. Parachutes are in low supply and cannot be purchased economically in sufficient volume to permit one-time use. Consequently, time and cost expenditures are required to collect the chutes after the drop.

The Food & Container Institute program will undertake research on aerial-delivery systems for dropping at

An illustrated booklet, "Careers in Food Technology and Packaging Engineering," is available from the Quartermaster Food & Container Institute for the Armed Forces, 1819 W. Pershing Road, Chicago 9, Ill.



RESEARCH ENGINEER studies the results of an impact test made on a paper honeycomb material that is currently under consideration as an energy absorber.



CLIMATIC CONDITIONS which exist at the delivery point must be considered in conducting performance tests. Here the standard drop tests are being conducted in an arctic room at the Quartermaster Food & Container Institute.

much higher terminal velocities than 30 ft. per second. It envisages velocities approaching free fall. In order that such terminal velocities can be utilized, exploratory research is needed to develop experimental data in all three of the categories mentioned.

In regard to the first consideration—characteristics of the item—investigation must be made into the impact-resistance properties of each item considered for aerial delivery. The range is from relatively rugged items, such as a can of beans, to such delicate items as radio transmitters and receivers. This phase of the problem concerns the inherent static strength of the item, its response to dynamic-force application, its fundamental response frequency and its mode of vibration. Frequently, in packaging literature, this knowledge has been referred to as G-factor. G-factor, however, is not sufficient for adequate design for aerial delivery, since maximum acceleration is but a small part of the acceleration-time relationship. The exact method of arriving at this knowledge—that is, defining the impact resistance in terms of engineering concepts, devising appropriate test methods and techniques, and applying this information to the solution of specific problems—is a challenging

field of investigation for the engineer, the physicist and the mathematician.

The second category—characteristics of materials—involves the investigation of the behavior of cushioning material, energy absorbers and items such as webbing and parachutes, hold-down devices and other design material under dynamic stresses. Considerable data are available in the literature of the packaging field regarding stress-strain characteristics of cushioning materials as obtained from force-compression studies under “static” conditions—or, more accurately stated, under low-speed hydraulic or screw-type testing-machine conditions. These are normally assumed to be directly applicable to cushioning design to protect the packaged item from normal transportation hazards. Investigations under dynamic conditions indicate that such assumptions are not valid at higher-impact velocities. The behavior is dependent not only upon the static loading, but also upon a dynamic factor which is dependent upon terminal velocity and other factors not normally associated with static loading. This phase of the work again offers a tremendous challenge to the scientific mind.

The third category—environmental factors—is about as complicated as the other two. Such factors as terminal

velocity, drop surface, horizontal component of fall and the effects of temperature and humidity on the item, the energy absorber, the materials of the drop rig and the drop surface are all part of the environment. In this, as in the previous phase, considerable static data are available to the designers. Also, as in the previous phase, the dynamic characteristics usually differ from the “static.” Here is a challenging field for the engineer.

In order to test the applicability of the data obtained and to monitor all three phases of the investigation, considerable instrumentation is required. This instrumentation ranges from small, self-contained and self-energized devices, which can be incorporated in the drop pack, to equipment which would fill a moderately sized room. Considerable latitude for improvement exists in the application of electronics and mechanics to impact phenomena. Transducers, amplifiers, recording devices, reading instruments, computers, predicting circuits—all offer a challenge to the alert mind of the scientist.

A twofold approach

The Quartermaster program dictates a twofold approach to the problem of air drop. The first approach is *(This article continued on page 193)*



1



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packaging pageant

1 Armour & Co. enters the booming liquid detergent market with its new Chiffon Liquid Detergent, available in 12- and 22-oz., red-and-white cans with dripless spouts and self-measuring caps. A two-case display of this new product is said to require 37% less shelf space than a single case of dry detergent packaged in cartons.

2 Poultry packaging moves forward with this new multi-unit turkey shipper built to hold four individually boxed Chester B. Franz turkeys. Four boxes fit into a sleeve that makes up three sides of the over-all shipper; boxes form fourth side. Boxes are attached to the sleeve by flaps at ends of each individual box. Opening the flaps opens the box as well as releases the box from the shipper. Sleeve, Container Corp. of America, Chicago.

3 Cellophane bag for $\frac{1}{2}$ -doz. pairs of Seneca-Knit Carriage Socks for Tiny Tots has a self-contained copper top that provides brand identification whichever side of the bag is face up. The top also has marking areas for color, content, size and style. The copper is formed by turning down the top of the bag, which is printed upside down, hence right side up on the reverse side. It is secured by stapling. The bag displays and protects the merchandise so it can be displayed on store counters. The package also lends itself to self-service selling. Cellophane bag, Milprint, Inc., Milwaukee, Wis.

4 A small carry carton solves the problem of packaging a combination offer of Frank Tea & Spice Co. mustard and a decorated opal glass table server. The carrier also provides an additional extra large package surface for promoting the special offer. Jar, Armstrong Cork Co., Lancaster, Pa. Server, Hazel-Atlas Glass Co., Wheeling, W. Va. Cap, Phoenix Metal Cap Co., Chicago.

5 Paper combined with polyethylene extruded on the back side is used for Curtiss Candy Co.'s new Miracle Aid drink powder packages. Six-color rotogravure printing with over-lacquer depicts an icy pitcher of the drink, shown in colors to represent each flavor. Reverse side carries recipes. Paper, S. D. Warren Co., Boston, Mass. Package material, Dobeckmun Co., Cleveland, Ohio. Design, Koopman-Neumer Studios, Chicago.

6 Sales of Interlake Facial Texture Tissue reportedly jumped to the highest peak ever achieved after introduction of the newly packaged product. Success is attributed to the striking color scheme—geranium pink which retains vitality under fluorescent lights, differs from common reds and stands out from competitors. The slanted white cross identifies single packages, is spectacular in a stack. Dark-blue lettering provides color contrast. Design, Leonard Wheeler, Los Angeles.

7 A special sleeve with hinged cover used over regular cases for the Bock Beer season saved money, simplified inventory and eliminated possible loss of special cases for Frankenmuth Brewing Co. Traditional goat's head in brown and black on white background clearly differentiated the sleeve from the regular black, red and yellow year-round case, while retaining brand-name emphasis. The sleeve also prolonged the service life of regular cases otherwise too soiled to be serviceable. Sleeve, Consolidated Paper Co., Monroe, Mich.

8 A design representing five hot dogs molded into the face of the new jar for Holsum Hot Dog Sauce relates the sauce to end use in three dimensions. The three-color, lithographed cap carries product information—trademark, ingredients, etc. Jar, Brockway Glass Co., Inc., Brockway, Pa. Cap, Trio Metal Cap Co., San Francisco.

9 New, easy-to-handle packages for the dealer are those for Dennison Mfg. Co.'s line of shipping, marking and identification tags in strong, transparent polyethylene bags. The line includes 28 items—a selection of styles, colors and sizes. The top is punched so bags can be hung on rack displays. Packages, suitable for bin, counter or peg-board displays, promise increased turnover through impulse sales. Bags, Austin Industries, Inc., Marlboro, Mass.

10 Profiles of 26 presidents reproduced on a series of glass-tumbler packages encourage shoppers to buy John W. Leavitt Co. "Teddie" brand nuts. Label information and price spot are confined to the closure, leaving the tumbler free for the pictorial profile and biographical data pertaining to each president. Tumbler, Hazel-Atlas Glass Co., Wheeling, W. Va. Anchorvac closure, Anchor Hocking Glass Corp., Lancaster, Ohio.



BISCUITS POP OUT uniform in size and shape when this large-sized tab is pulled to open up entire side of package. Before, a knife or a can opener had to be used.



BEER IS PULLED OUT easily from top of carry carton when section of top is torn along perforations running out from handle opening. Cans no longer need be pried out.

More easy-open ideas

Six new examples show packagers' increasing concentration on consumers' complaints about products that are hard to get at

There seems to be no limit to the number of ingenious ways in which manufacturers can make their packages easier to open and their products easier to get at. This is especially true today in the food field.

There is a certain point, apparently, which everyone reaches. The heavy pressures of today's marketing conditions quickly force competing manufacturers to use the best possible package design, the latest developments in packaging materials, the newest manufacturing techniques in the products themselves. This done, what is there left to improve? What can one manufacturer do to give himself that small but powerful competitive advantage which may then be promoted to the hilt?

One thing he can do is to make it

less of a chore for the housewife to open his package. Sometimes this can be accomplished in such a simple fashion that the expense involved is close to nothing. Yet the popularity of even the most elementary easy-opening device is virtually guaranteed, so convenience-minded is the public today.

And the opportunities which an easy-open feature make possible do not have to be limited to consumer promotion. Although these devices are, obviously, designed first of all to win new customers and then bring them back for more, they can do more than that. Easy-opening package improvements can be used to stimulate sales all the way down the line; they are a promotional tool to be used by the manufacturer's own salesmen, by

his distributors and wholesalers and by the retailer.

The forms which these opening devices take will vary, of course, with the type of food product. Many of them are made necessary, ironically enough, by the improved methods of packaging which have been developed in recent years. Tightly sealed foil overwraps and securely locked carry cartons have many advantages, but ease in opening is not always one of them.

A number of these interesting openers, such as a pull cord on a canister of ready-to-bake biscuits¹ and a tear tape on a foil-wrapped margarine package², have been described during

¹ See "Zip-Open Biscuits," MODERN PACKAGING, May, 1954, p. 130.

² See "New Tear-Tape Possibilities," MODERN PACKAGING, Aug., 1954, p. 85.

the past year on these pages. And, along with them, the fast-growing move towards the use of tear tapes and similar openers on shipping cartons³ must be familiar to most packagers.

Now, the movement appears to be snowballing rapidly. Familiar devices seem to be spreading almost daily into new fields; novel variations are being introduced. As examples of this growing trend, we have picked six brand-new easy-opening ideas, all announced within the last few weeks.

The carry-home can carton, the biscuit canister, the metal-end frozen-fruit container, the tight-wrapped cereal box, the foil-sealed margarine package—none of these has ever been simple for the housewife to open. But, as our case histories make clear, manufacturers who use these packages are doing everything they can think of to make them so.

For biscuits:

a long pull tab

The new package introduced last month by the Borden Co., New York, for its "Bake 'n Eat" biscuits is equipped with a pull tab that extends its entire length. Biscuits such as these have always been a difficult product to package, because of the pressure which is built up by the product itself. After three years of research, Borden feels it now has a container which is simple for the housewife to open, will give her 10 properly shaped biscuits ready to be placed in the oven, yet will not explode in her face.

This convolute-wound cylindrical container is made of light paperboard lined with aluminum foil and has ends of metal. The paperboard cylinder wall has about 2 in. of overlap, ending in a broad, roughly triangular-shaped flap which can be easily gripped as the package is opened.

Borden feels that the longer pull tab is faster and more satisfactory than a scored section with pull string which has previously been used by other companies on this type of package for this type of product. The pull tab has the advantage of opening the entire side of the container at once, thus dispersing any pressure built up inside it.

CREDIT: Package by American Can Co., 100 Park Ave., New York 17.

³ See "Swing to Tear-Strip Cases," MODERN PACKAGING, June, 1954, p. 116.

For beer:

a perforated carton

There is no doubt about beer drinkers' liking for the six-can carry carton; the practice has swept the field. But the necessary locking construction and the required strength of the carton board to make this a practical carry-home package have also made it difficult to open. A survey convinced P. Ballantine & Sons, Newark, N. J., that it would pay to find some way to make the carton easy to open in the home, if that could be done without weakening the carton's function up to that point.

Some months ago, the company introduced its first easy-opening carry carton. It had finger holes on each of the sides which could be punched out, after which the customer pulled upwards toward the handle on top, ripping out a large section and leaving a hole for easy removal of cans.

This carton proved to be successful, but was replaced by the present version when Ballantine decided that it would like to have the entire surface of the carton free for a four-color illustration showing glasses of beer ready to be served.

As it is now constructed, the punch holes on the sides have been abandoned and the user is told to tear

down along twin perforations beginning at the center aperture under the carrying handle. The end effect is the same: the cans can be easily lifted out from the top, not laboriously pried out from the sides. The perforations do not impair the strength of the carrier and, even after the section on the top has been torn out, the paper-board framework that is left is enough to keep the remaining cans in place.

Ballantine's new carrier, which is being demonstrated in use on television in the New York area, is now used to hold regular or 16-oz. cans.

CREDIT: Carton by Container Corp. of America, 38 S. Dearborn St., Chicago 3.

For margarine:

a snap-open end

A special opening-and-dispensing feature is now being used by Durkee Famous Foods, Cleveland, on its 1-lb. margarine package which permits a single stick to be removed at a time—the way the average housewife uses it—without seriously disturbing the protection of the remaining prints.

When it recently adopted a new overwrap for the margarine folding carton—aluminum foil laminated with two layers of wax-impregnated tissue—Durkee ran up against a familiar

STICKS DROP OUT, one at a time, from square opening at end of this margarine package, with unused portion protected. Formerly, package had to be virtually ripped apart to get contents.





CEREAL POURS OUT through semi-circular opening which can be punched out by user in the side of carton. This is said to eliminate slitting open carton with knife, as once was necessary.

problem: tightly sealed foil is not easy to break open without ripping apart the entire package. So a special tab opening was designed to give easier access to the contents. This was chosen in preference to a tear tape, which would rip off the foil covering from one whole end of the package.

A clearly marked red semi-circle on the rear of the package says "push in-tear down" and beneath it there is a semi-circular hole in the package itself, similar in size. When the wrapper at this spot is pressed, a square section of the end of the carton can be folded back, leaving an opening just large enough for one quarter-pound stick of margarine to come out.

The remaining three sticks, each wrapped in all-vegetable parchment, can be left in the carton, for extra

protection, until they are needed and the carton itself can then be stored in the refrigerator.

Durkee is using the new carton with a snap-open dispenser in two different styles, each colorfully printed in red, yellow and blue: a square Western-style package, with four sticks ranked two-by-two, and an Eastern-style flat package, with the sticks side-by-side in a row of four.

CREDITS: Cartons by Marathon Corp., Menasha, Wis. Overwraps by Reynolds Metals Co., 2500 S. Third St., Louisville 1, Ky., and Shellmar-Betner Div., Continental Can Co., Mt. Vernon, Ohio.

For frozen fruits: a string

...and a side flap

One of the most troublesome frozen-foods packages, as far as the consumer is concerned, has long been the rectangular metal-end fibre can used for frozen fruits in syrup by many packers. Within recent weeks two of the largest producers of frozen foods have introduced new opening devices for these fruit containers. Although quite different in operation, they have exactly the same ultimate goal: making it possible for the user to obtain the contents with a minimum of effort and without spillage.

Snow Crop Div., Minute Maid Corp., New York, has begun test marketing of a package with a zip-string device which has been used in the past on a number of food and non-food products. Reportedly, this is its first application in the frozen-food industry. The fibre section of the container has a string embedded between its walls, with one end hanging loose. When this is pulled, the string tears through the label and scores the con-

tainer itself, which can then be broken apart into two neat sections and the contents easily removed. If a housewife wishes to save some of the fruit, the end may be replaced.

Birds Eye Div., General Foods Corp., White Plains, N. Y., gets the same job done by means of specially designed side-opening flaps, not unlike those used on the Borden biscuit canister. The side seam is plainly marked on the new Birds Eye container for frozen fruits and berries, which is produced from a composite material that eliminates the paper overwrap. The user is instructed, by means of small drawings on the side of the package, to slit the seam with a knife and lift up the two flaps. This done, getting out the contents should be a simple task. Birds Eye's container may also be used to hold some of the frozen fruit for future use, if desired, by folding the flaps back in place.

CREDITS: Snow Crop cans by Sefton Fibre Can Co., sub. Container Corp. of America, 3275 Big Bend Blvd., St. Louis 17. Birds Eye cans by American Can Co.

For cereal:

a push button

Sometimes easy opening and easy dispensing can be combined into a single device so simple that it raises the perennial question of "Why wasn't this done long ago?"

Such a simple device has recently been added by Cream of Wheat Corp., Minneapolis, Minn., to the tight-wrapped folding carton which is used for both its quick-cooking and regular Cream of Wheat cereal. In the past, housewives reportedly found it difficult to pry open the sturdy boxes used for these cereals. Users often felt compelled, the company discovered, to hack away at the cartons with a knife in order to get the cereal out—probably spilling a good bit of the free-flowing cereal in the process.

The situation has been remedied just by placing a perforated semi-circle near the top of one side panel of each carton, covered by the outer wrapper, on which "Press spot to open" is printed. Slight thumb pressure at this point is all that is necessary to punch out an opening through which cereal may be easily poured.

CREDIT: Carton by Downing Box Co., 3832 N. Third St., Milwaukee, Wis.

STRAWBERRIES COME OUT without much trouble from these two new metal-end fibre cans for frozen fruits. Pull strings (left) or side-seam flaps do away with the necessity for using a can opener.



Mobiloil speed-up

New 600-a-minute unscrambler and high-speed filler give motor-oil can line a comfortable margin over daily requirements

The canning of motor oil—long one of the most efficient of big-volume packaging operations—reaches a new peak of efficiency at the Brooklyn refinery of Socony-Vacuum Oil Co., Inc., with the installation of a new high-speed unscrambler that can feed empty 1-qt. cans at 600 per minute and a new 21-piston rotary filler that can fill them neatly at the rate of 500 per minute.

For the present, the line is limited by the machine for closing, sealing and embossing the cans, which has a peak speed of 480 per minute. Present schedules call for optimum output of from 350 to 380 cans per minute with a day-in, day-out average of 300.

The new equipment is part of a long-range modernization program designed to meet an increased demand for Mobiloil lubricants while maintaining low production costs for the operation.

The unscrambler, which does away with cut fingers and saves labor,

is the first such installation in an East Coast refinery. Its function is to transfer empty cans from reshipper cartons to a conveyor belt leading to the filling machine. The higher-speed equipment will allow Socony-Vacuum to care for peak loads of seasonal demands without adding another shift of men. Operation is planned so that the same group of men also have time to operate other machines which fill two more package sizes on a regular schedule basis.

Every eight hours, 6,000 cartons of 24 cans each, consisting of a maximum of four grades of product, will be processed. Socony-Vacuum people feel that the key to the success of the filling line is the operation of high-speed machinery at an optimum speed, below top-rated speed, with an optimum labor force. This will prevent the mishap delays which can occur at top speeds and which cut into actual average-speed output. Socony plans to put the emphasis on the average rather than the maximum output per



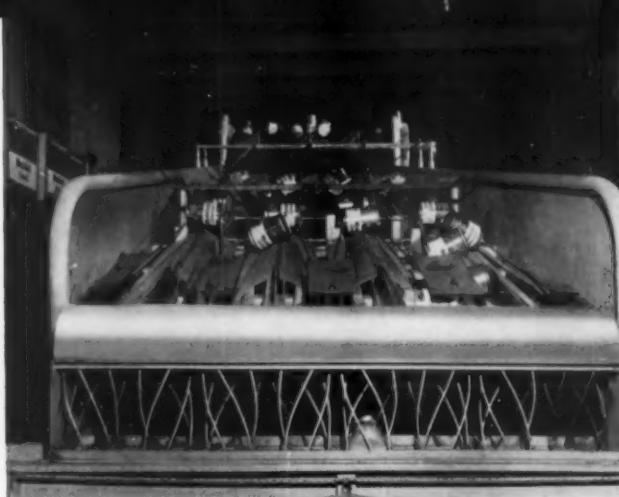
OPERATION STARTS with unloading of cartons of empty cans from supplier's trailer van directly onto a conveyor belt.

NEW UNSCRAMBLER is located one floor above the filling line. Reshipper cartons arriving on one conveyor from the trailer van are manually dumped and sent back on another conveyor to the re-loading point. In machine, the scrambled cans move upward from the right on a cleated belt and fall over a roller on top into four lines on a combination belt and gravity track.





MIRRORS ON WALL enable the single person required to operate the unscrambler to maintain a constant check of the entire filling-line operation.



ROLLING DOWN unscrambler over inverted V-shaped tracks, cans right themselves because bottom of can is heavier than open top. They drop (foreground) on take-off belt single file.

minute as the standard for the day's production.

The oil-can filling line is very similar to food-processing lines, minus the stainless-steel or sterilized equipment necessary in the food industry. In the Brooklyn operation, cartons of empty cans are unloaded by one man from the can-supplier's truck onto a conveyor belt which carries them some 40 ft. through the building and up one story. Electric eyes control this booster conveyor until cartons reach

the can unscrambler. Here, an operator dumps the cans into the machine's hopper and puts the empty cartons on another conveyor which carries them to the case-packing machine.

The cans, meanwhile, are moved upward in the unscrambler machine on a cleated belt and dumped over a roller at the top onto a combination belt and gravity track. Rolling down over an inverted V-shaped track, the cans right themselves, because the bottom of the can is heavier than the open top. When the cans reach the lower end of the track, they are arranged in groups of two rows each with the open ends facing each other. The entire unscrambling operation is accomplished without scratching or marring the cans.

Mirrors placed on the wall opposite the operator enable him to keep a constant check on the machine's entire operation.

Strips of leather were installed in an overhang near the center of the inverted V-shaped track. The leather, hitting the cans gently as they roll down the track, slows their progress just enough to keep them from occasionally flying out of the machine and onto the floor.

From the unscrambler, the cans move through a series of twisters which shake out any possible dirt or foreign matter, leaving the cans clean and ready for filling. A gravity conveyor then drops them 4 ft. through the floor, along 30 ft. of inclined

track and down a 5-ft. drop to the filling machine.

Here, the new high-speed equipment fills the cans rapidly and efficiently without spillage or stains, the company reports. One man operates the filler and the capping machines. A seaming head rolls the lids on the cans and embosses them with the grade of oil contained.

The entire operation is planned so that the empty carton rejoins the cans, now filled with lubricating oil. The carton then is sealed with waterproof glue and an identification mark is stamped on the carton's side. This packing portion of the line requires one operator.

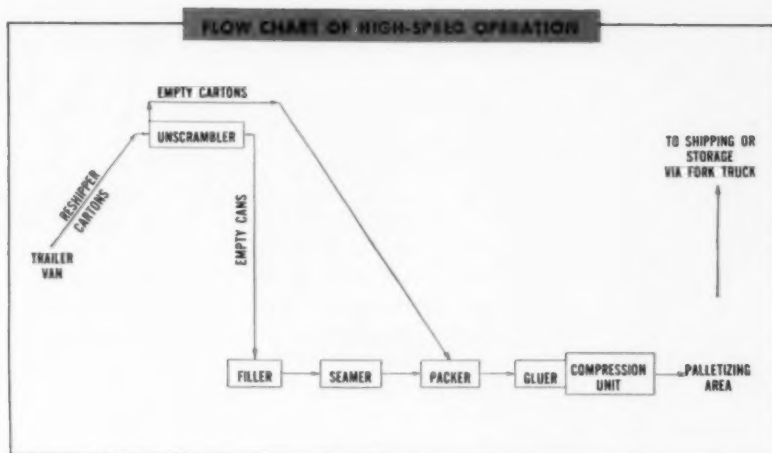
Since the filling line operates with machines that are closely linked in Socony-Vacuum's building, it is not necessary to have several hundred feet of conveyor in order to have a reservoir of empty cans. Each operation is keyed to the next so that there is no lapse or waste of time.

Socony-Vacuum includes no palletizing machine in the operation at present. Two men handle the stacking and palletizing of the cartons and a third drives the fork truck which carries them out. In addition to the seven men mentioned thus far, a relief man and a machine attendant, who also is group leader for the men, belong to the group operating the filling line.

To avoid unforeseen delivery difficulties, a three-day supply of empty cans in reshipper cartons is kept on hand. A three-day inventory of full cases also is maintained at the warehouse and turned over on the basis of a stock-rotation program. Aside from this cushion for special needs, the



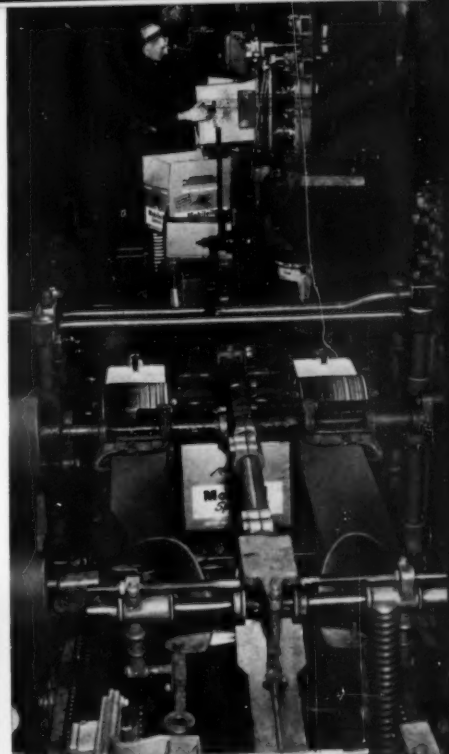
SERIES OF TWISTERS inverts the cans and shakes out any dirt or foreign matter inside.



can-filling line operates directly to transport truck to the marketer at optimum speed and with the utmost efficiency.

The new high-speed equipment at the Brooklyn refinery is considered by Socony-Vacuum to provide one of the most efficient of its world-wide packaging operations.

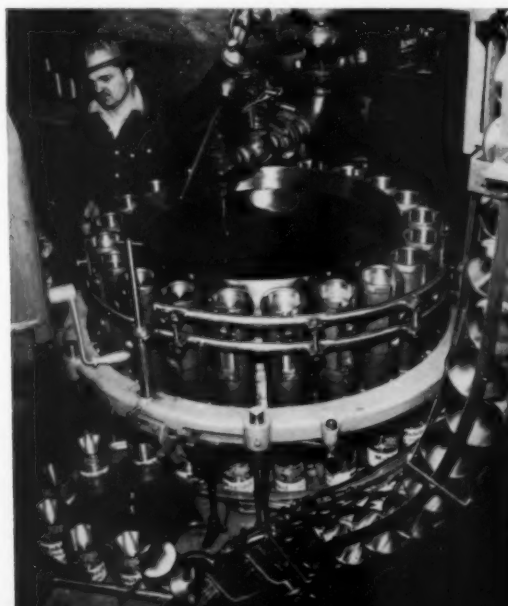
CREDITS: Can unsrambler by Dudley Machinery Corp., Mountain View, Calif. Filler by The Pfaunder Co., 1,000 West Ave., Rochester 3, N. Y. Cans, can-closing and embossing machine, conveyor and twister by American Can Co., 100 Park Ave., New York 17. Case-loading machine and case sealer by Standard-Knapp, Div. of Emhart Mfg. Co., Portland, Conn. Corrugated shippers by Atlantic Container Corp., 48-08 30 Pl., Long Island City 1, N. Y.



LOOKING BACKWARD from end of line, this view shows case sealer (foreground) and, beyond that, automatic easer where filled cans rejoin the 24-can re-shipper cases conveyed down from starting point on the floor above.

END OF LINE finds motor oil moving to market in palletized loads handled by fork truck. Helmets are a safety precaution used in the Brooklyn refinery.

ROTARY FILLING MACHINE with 21 heads (illustrated here with cover removed) is capable of filling up to 500 quarts per minute without spillage.



CLOSING MACHINE takes cans directly from filler, applies lids, seams them and embosses the lid with the grade of oil contained. The peak speed of this machine is 480 cans per minute.





Mops to the forefront

Five windows in this compact floor display stand give customers a glimpse of various portions of the supply of 12 mops inside.

Ox Fibre Brush Co., Frederick, Md., packs a dozen mops in this shipping container, which the retailer can stand on end and convert into a display unit. In the right-hand panel of the carton, four windows give a view of the mop heads, while the handles may be easily seen by the shopper through a window in the adjoining panel.

The corrugated container is printed in red, white and blue, which accents the bright red handles of the mops and the red-and-blue cellophane wrappers in which the heads are packaged.

Copy designed to encourage mop purchases is printed in red and blue across the carton, with the words, "Save Time, Save Trouble, Save Money," appearing on one panel and "Cleans your floors faster and better" on the other.

CREDIT: Display designed and manufactured by Container Corp. of America, Chicago.

DISPLAY



Self-stacking razor sets

An unusual locking device permits these razor-and-watch-band gift cartons to be stacked up to form their own counter display rack. American Safety Razor Corp., New York, developed this inexpensive paper-board package to eliminate the need for a costly, space-consuming metal rack.

Each of the cartons, which contains a Pal razor, 10 blades and a plaid nylon watch band, has a tab-and-slot arrangement in which a tongue in the base of one container locks into an opening in the carton beneath it. In this manner, six of the cartons may be arranged into a stable, compact vertical stack on the retail store counter.

The display is designed to be virtually pilferproof, since the plastic razor case fits securely into a die-cut opening in the base and a specially designed hidden lock-tab prevents the watch band from being removed.

Dubbed the "He-Man Special," the display package is lithographed in four colors.

CREDIT: Display by Chopp Printing Specialties, Inc., New York.

Cigarettes, family style

Three different kinds of cigarettes are now sold under the Old Gold name by P. Lorillard Co., New York, and the company's new 32-pack retail counter display has spaces for all three of them.

The newest member of the family, Old Gold Filter Kings, gets the seat of honor in this compact platform display, with room being provided for two rows of eight packs each of the new variety. Flanking it on either side are spaces for eight packs of Old Golds in the regular and king-size versions.

Taking up less than a square foot of counter space, the display piece has 16 sections, each large enough to hold two packs of cigarettes and arranged in step fashion. The entire unit is produced from lithographed paperboard.

Copy along the bottom describes Old Golds as "America's first family of cigarettes" and a line at the top calls them the "first famous name cigarette with a filter."

CREDIT: Display by Einson-Freeman Co., Inc., Long Island City, N. Y.



GALLERY

Highway sign for picnics

Plenty of room for retailers to build a mass display of picnic foods and supplies is provided in this new stand offered by Canada Dry Ginger Ale, Inc., New York. Designed as part of the company's summer-long picnic promotion going under the slogan "Route 1 for Summer Fun," it is topped by a simulated highway marker.

A brightly colored striped awning covers the shelf, which the store may use for related-item merchandising of picnic items, and beneath the shelf are placed up-ended cases of Canada Dry beverages wrapped in yellow and green corrugated paper. The display piece itself is produced from printed, varnished paperboard.

In combination with this display, Canada Dry is offering food stores a number of other point-of-sale devices, including flange cards, window posters, stand sleeves and hanger cards, all as part of a campaign to remind customers that it's time to buy for outdoor living.

CREDIT: Display by Spurgeon-Tucker, Inc., Bronx, N. Y.



OWENS-ILLINOIS ASSURES YOU A



Co-ordinated Research

Pure research into formulae and fabrication of glass, packaging research into processing and handling methods in customer plants, and market research into consumer attitudes, add up to greater specific value for your packaging dollar.



Engineered Design

The package that takes your product to market must take *three* needs into account. Considerations of its function in the retail store, its operating efficiency and its consumer utility all become a part of the prescription for an Owens-Illinois package.



The Right Container

Versatility of facilities enables Owens-Illinois to supply containers to meet special needs: Duraglas containers for almost any item; Libbey Safedge packing tumblers or premiums; Kimble Ampuls and Vials; and a variety of Owens-Illinois plastic containers.

The right closure sells



COMPLETE PACKAGING APPROACH



The Right Closure

Know-how as to the best available liner and closure—best for packing, displaying, or using a specific product—may well be one of the most important single points through which expert packaging counsel will reward you many times over.



Needed Fitments

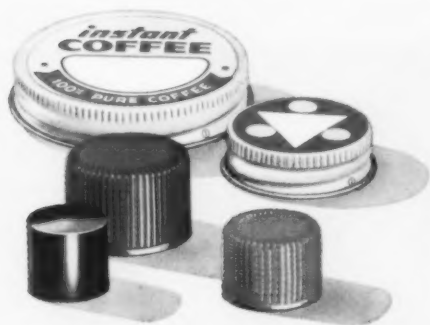
With emphasis on the word "needed," Owens-Illinois specialists are keenly aware of sales benefits possible through use of plastic shaker and pour-out fitments which are not "gadgets" but which increase consumer satisfaction with your product.



Merchandising Cartons

Modern cartons are developed only through systematic consideration of their opportunity to serve you in the retail store and retail warehouse as well as on your own filling line and in transit. Owens-Illinois is pioneering such developments.

while it protects...



*These Stak-R-Caps
and molded closures
both pass the test*

Building more sell into your package often starts right at the top.

Could you benefit from use of the pictured staker cap and jar for easier display in the retail store? Could your cap carry a strong point-of-sale message?

Would a smart molded closure improve the eye appeal as well as the utility?

At Owens-Illinois, *all* the necessary ingredients of salespackaging are co-ordinated to secure the extra sales impact you need. Look to

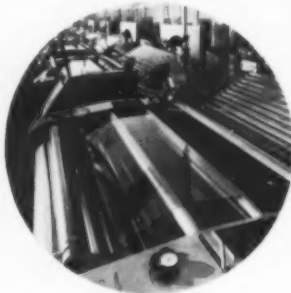
Owens-Illinois as a market-minded supplier for glass containers of all types and capacities, cartons with built-in point-of-sale value, fitments that meet your dispensing need, quality closures in metal and plastic.

METAL AND PLASTIC CLOSURES
AN **(I)** PRODUCT

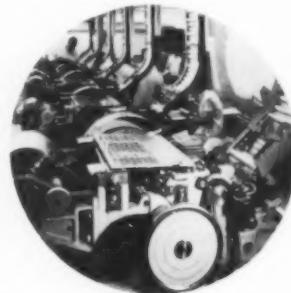
OWENS-ILLINOIS
GENERAL OFFICES • TOLEDO 1, OHIO

Saran Wrap

HOW SARAN WRAP IS PRODUCED



Giant "bubble" is extruded . . . flattened into film . . .

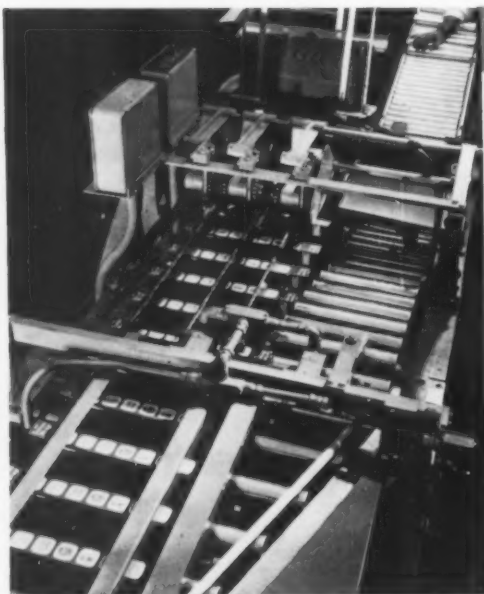


. . . split to proper width . . . and wound on paper cores.

Saran Wrap, the saran film for consumer use which Dow Chemical Co. introduced less than two years ago, has characteristics which make it different from any other consumer product. Although it currently is packaged in a container very similar to that popular for waxed paper, the extremely thin gauge and high static pick-up of saran make it a much more difficult packaging problem. As a result, Dow has set up an unusual battery of automatic packaging machines, carefully integrated to handle Saran Wrap as it progresses from drums of dry granules to cases of packages.

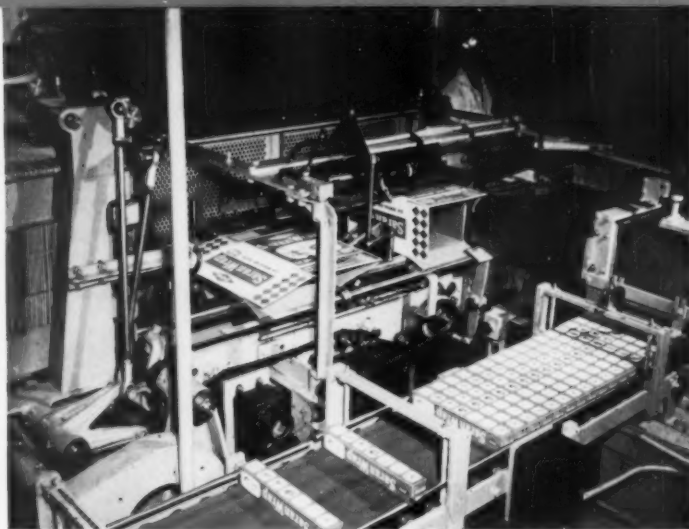
Backed by a king-sized advertising barrage, Saran Wrap's sales have been "phenomenal" and production has already outgrown the original facilities. To take care of the greatly increased demand, Dow recently opened a new 100,000-sq.-ft. plant in Midland, Mich., which will be devoted exclusively to making consumer Saran Wrap. Anticipated output is more than five million rolls a month.

Automation has been introduced all along the packaging line: slitting and winding of rolls; opening, filling and gluing of cartons; opening, loading



ROLLS ARE POSITIONED opposite row of empty cartons (left rear). As parallel columns of cartons and rolls move forward, Saran Wrap rolls are shoved into place and the end flaps sealed.

New automatic



24 AT A TIME, a load of cartons is driven by automatic pusher arm into waiting empty shipping case. Four rows of six rolls each are assembled and shoved into the case, which has been opened and positioned by new equipment at rear.

automatized

Dow's spanking new consumer-film plant has packaging devices designed to boost production to 5,000,000 rolls a month

and sealing of shipping cases—even counting and addressing consignments for shipping—all are done mechanically. At least two newly developed pieces of equipment are being used for the first time anywhere in this new plant—an automatic opener and positioner of shipping cases and an automatic case counter and address printer.

The actual production of saran film is quite unusual.* The polymer used to manufacture the plastic is produced at another of Dow's Midland plants and delivered in dry granulated form in 250-lb. fibre packs. It is first fed into extruders, where frictional and applied heat convert it into a molten material that takes the form of a tube.

Compressed air is forced into this tube, which is stretched into a unique "bubble" about 80 in. in circumference and $\frac{1}{2}$ mil thick. This orienting process produces a film with the familiar properties of saran, which is

compressed and wound onto mill-type rolls. These rolls are then slit into 12- or 18-in. widths and rewound.

Now the film is ready to be packaged. The first step is to wind it onto paper cores, this being accomplished on special winding machines into which the cores can be fed at about 20 per minute. Twenty-five feet of Saran Wrap is wound onto each core and the leading edge of the film embossed for easy location.

Each of Dow's three packaging lines is set up to handle the output of a group of winding machines, with two lines turning out 12-in. rolls and third producing rolls 18 in. wide. Speeds of more than 125 rolls per minute are said to be possible on each of them. On each line, a multi-lane conveyor carries rolls to a collector which discharges them onto a single belt. This conveyor carries the Saran Wrap rolls into a cartoning machine, into which flat cartons are fed. The cartoner automatically opens the cartons and moves

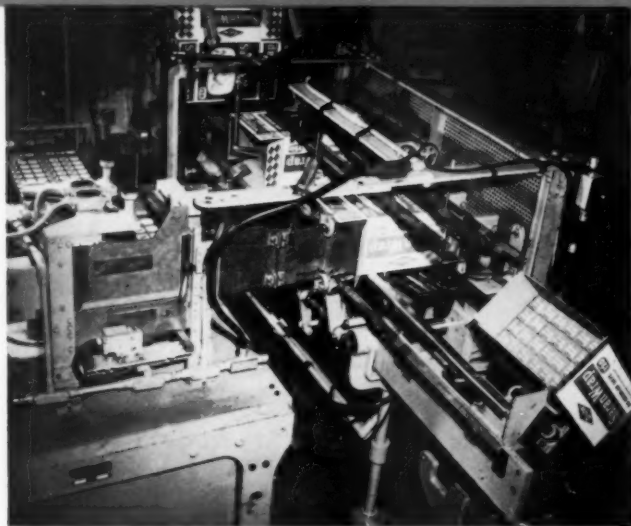
them along a conveyor parallel to the line of rolls. As each roll comes into position opposite a carton, it is shoved in and the end flaps closed and glued.

The Saran Wrap dispenser cartons are packed 24 to the shipping case, in a six-by-four pattern. Cases are fed, in upright position, into a new automatic machine which opens them. A second machine positions them on their sides alongside the incoming supply of filled cartons. Cartons are collected six at a time, in the load-forming section of the packer. When four rows are assembled, a pusher shoves all 24 cartons into the case. Finally, a special machine counts off any pre-set number of cases, then automatically addresses them.

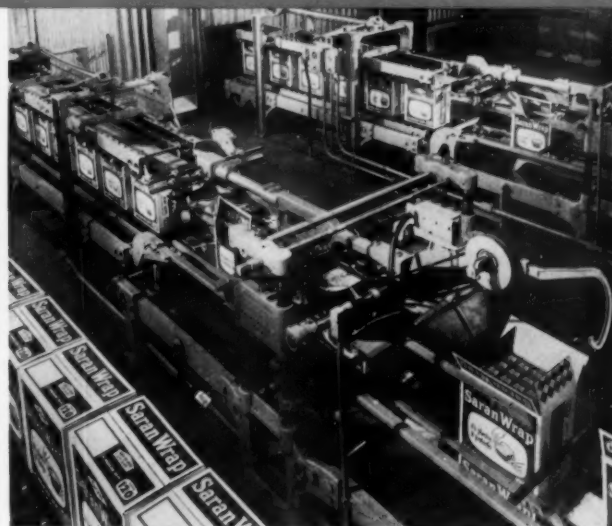
CREDITS: Seven-lane conveyors, collectors, cartoners, case openers, case packers, case gluers and sealers, counter and printer by Standard-Knapp Div., Emhart Mfg. Co., Portland, Conn. Rewinders by Schultz Engineering Corp., 190 Banker St., Brooklyn 22.

* See "Saran Film Today," MODERN PACKAGING, April, 1954, p. 117.

equipment speeds it into cartons



TIPPED UPRIGHT, loaded carton is moved on conveyor belt to gluing and sealing machine. Three packaging lines, each capable of speeds of more than 125 cartons per minute, are used to handle the output of Saran Wrap.

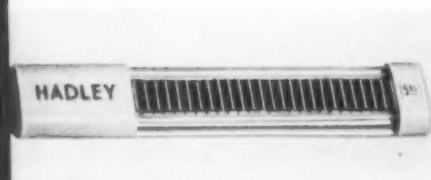


GLUING AND SEALING of top and bottom flaps of shipping cases are done on standard equipment and cases are conveyed to loading dock for shipment. New-type automatic machine counts and prints addresses on cases.

Locked-in watch band

Elgin's simple plastic tray with slip-on end sleeves

holds band securely, yet leaves it readily accessible for examination



JUST THE RIGHT LOOK—suitable for gift giving, yet utilitarian enough to please replacement purchasers—is achieved by new Elgin package, injection molded of polystyrene in three parts, with a transparent tray base and opaque pastel-colored end sleeves. There are sizes to fit both men's and ladies' bands.



FOR EXAMINATION, the customer need remove only one end piece; band remains locked in other end and may be stretched and examined from all angles.



FOR REMOVAL, both end pieces are slipped off, leaving the band simply resting in the tray. Ends of the band fit into recesses in base and are locked in only when the sleeves are in place.

A watch band, in a way, is forced to lead a double life. It must have sufficient allure to be suitable as a gift. At the same time, it may be regarded as just a utilitarian replacement part, something that must fit a particular watch and a particular wrist.

So the package used for a watch band must suit both buying moods. It must serve as a showcase for a possible gift item and it must at the same time securely hold the band and yet permit it to be removed easily for customers to try on.

Elgin National Watch Co., Elgin, Ill., after about three years of experimentation with various types of packages, has introduced an all-plastic container for its Hadley bands that appears to do both these things well. Apparently watch-band customers agree, for Elgin reports that sales are now running more than 50% above last year's level.

A slim, snug injection-molded polystyrene container, the three-piece package is, in effect, an open tray, with two partial end sleeves that slip on and off. Closed, the package holds the band tightly in place, yet keeps it almost fully visible. With the end pieces removed, it is a simple matter to take out a band, try it on and replace it.

Three years ago, when The Hadley Co. was bought by Elgin and became its watch-band division, a bulky, satin-lined jewel box was being used for the bands. It was elegant, in an old-fashioned way, but was hard to store and merchandise and, even worse, looked like too much package to someone who merely wanted a new band for his own wrist.

The company then made a complete about-face, going from a large, costly container to about the simplest possible packaging device: a plain card with metal staples.

This proved to be a mistake. The item had lost its gift appeal and once the staples were pulled off so

that a customer could try on a band, they were nearly impossible to replace and, for all practical purposes, the package was ruined.

Jewelers themselves submitted the next idea which Elgin tried. They suggested that bands be held in place with elastic and clips. This succeeded in solving the metal-staple problem, but experience soon showed that the clips would not hold the bands tightly in place. They soon began to sag on their cards and, as a result, present a rumpled, shopworn appearance.

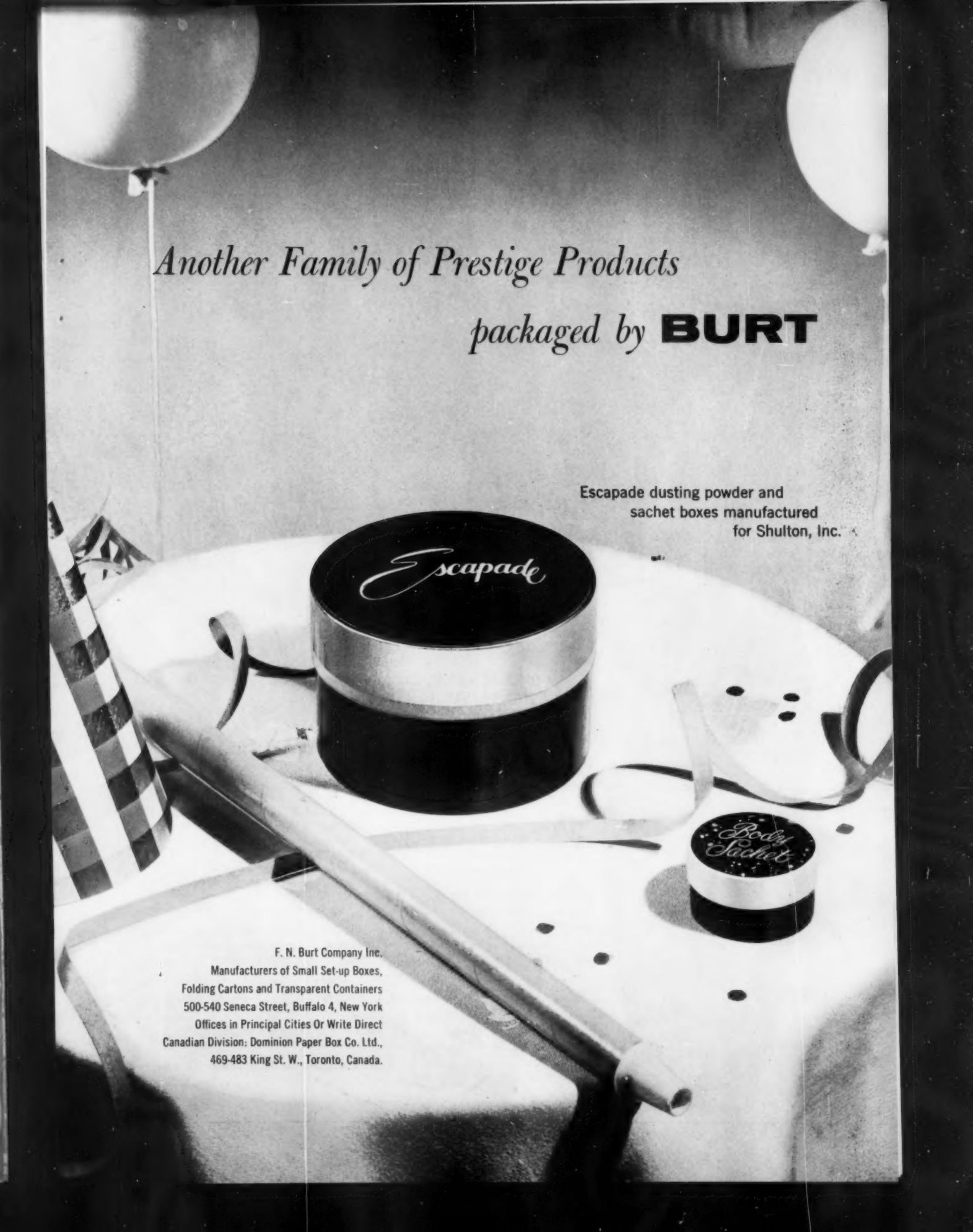
These unsuccessful packages led finally to the creation of the present one, which holds the bands flat and tight, without any sagging. Each band fits snugly into a groove in the transparent center section of the three-piece package, with the two ends dropping into circular depressions in the molding and being locked in place by the sliding end sections made from opaque pastel-colored polystyrene.

Only adornment on the package is the trademark "Hadley" in simple raised lettering in a contrasting color on the left-hand end piece. On the other end of the package, a tiny gummed sticker is used as a price-mark device.

To examine one of the bands, the customer need remove only one end piece, leaving the other end locked, so that there is no danger of the band becoming separated from its package. It is easy to replace the band and slip the end sleeve back on.

Elgin is convinced that this trim plastic sleeve has finally solved its watch-band packaging dilemma, offering both gift and replacement appeal, and is not at all unhappy to discover that its cost is less than one-tenth that of the formerly used jewel-box container.

CREDIT: Package injection molded of Koppers polystyrene by Elgin Molded Plastics Co., Elgin, Ill.



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New low-cost boxboard tames hard-to-package foods



A man in a tuxedo is holding a large, diamond-shaped board. On the board are various food items: a stack of round cookies, a pile of french fries, a whole pizza, a cluster of grapes, and several small round pastries. The board is tilted upwards, and the man is looking at it with a smile.

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If stickiness, staining, grease or moisture make your product hard to package, here's a material that licks them all.

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In addition, this board gives your product extra protection at lower cost than conventional laminates. Ask your regular carton supplier to use it.

* Exclusive Gair development — patent applied for.

B.5.8

Look what the new modest-priced metallized polyethylene coated board can package perfectly: bakery products, confections, dates, French-fried frozen foods, frozen fish, detergents, cereals, pretzels, sausages, potato chips, bleaching powders, and many others.

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tubes molded from **BAKELITE** Polyethylene take printing with fine details in close registration. They're filled on the same type of machinery, slightly modified, used for metal tubes. Ends are closed by heat-sealing. Tube necks are molded with the body, preventing leakage. The light weight of **BAKELITE** Polyethylene keeps shipping costs down.

This is just another example of the imaginative packaging inspired by BAKELITE Polyethylene. Learn more about this plastic by writing Dept. AO-105.

Bracon Tubes molded from BAKELITE
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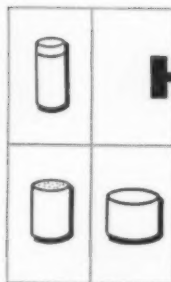
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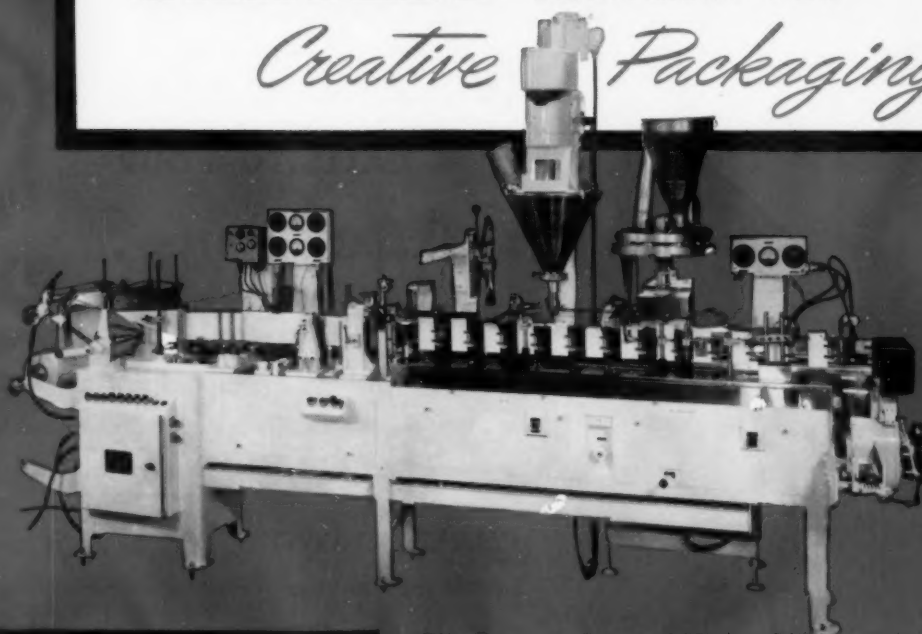
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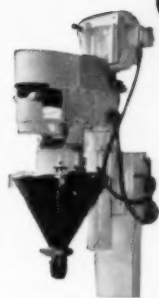


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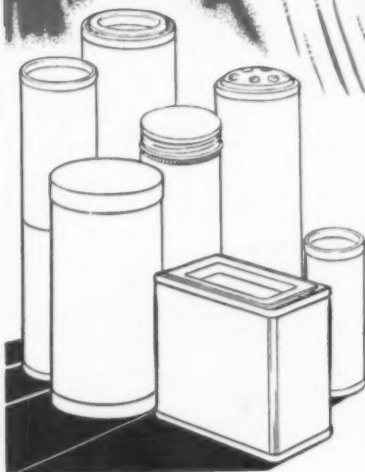
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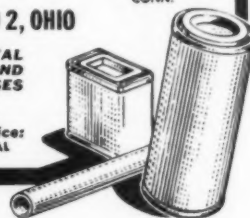
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TECHNICAL

ENGINEERING • METHODS • TESTING

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A tester for pliability

It establishes wrappability of materials as a distinct property

and may offer standard means of measurement. By THOMAS P. WHARTON*

At the present time there appears to be little control over the suitability of wrapping materials for packaging operations, especially the heavier wrapping materials. There seems to be no adequate testing method or testing instrument which is particularly suitable for measuring the pliability or wrappability of paper and similar materials.

Government packaging personnel became aware of this problem when they found that military barrier materials furnished by the lowest bidder were not always suitable on the military packaging line. A material might meet all of the requirements

* Manager, Washington Division, Container Laboratories, Inc., Washington, D. C.

of the stringent military specification, but be unacceptable, from a handleability standpoint, to packing-line personnel.

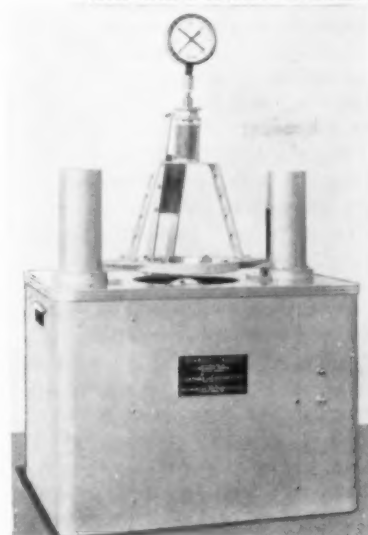
Many terms are used in defining the properties of paper and similar materials. For years, discussions relative to the testing of these materials have been confused by lack of agreement on definitions of the various properties. The pliability of materials has long been evaluated by opinion, intuition and long experience. In the jargon of the trade, the "handle" or "feel" of a material has been discussed non-scientifically.

To help clarify this situation, a distinction has been drawn between *fundamental* properties and *use*

properties. Fundamental properties are specific characteristics of a sheet when it is considered as a material. Use properties are characteristics affected by two or more fundamental properties and are closely associated with the use requirements of the sheet.

The fundamental properties of pa-

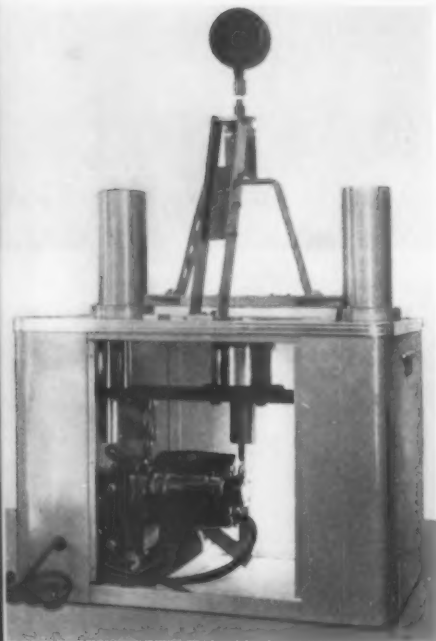
PHOTO COURTESY CONTAINER LABORATORIES.



1. FRONT VIEW of development prototype of pliability tester for measuring wrappability, as developed for Ordnance Corps. It measures force exerted on ring in conforming material around surface of upward-rising plunger.

TABLE I—TYPICAL BARRIER-MATERIALS SELECTED FOR TESTING

Material No.	Specification	Construction
1	Grade A, Type I, Class 1	#65 poly.-coated kraft, flat
2	Grade A, Type I, Class 1	Kraft and film, creped
3	Grade A, Type II, Class 1	Kraft and foil, creped
4	Grade A, Type II, Class 1	Coated kraft, flat
5	Grade A, Type II, Class 1	Paper-foil-paper, flat
6	Grade A, Type II, Class 1	Poly.-coated kraft, creped
7	Grade A, Type II, Class 1	Kraft and film, flat
8	Grade A, Type II, Class 2	Waxed kraft, creped
9	Grade A, Type III, Class 1	Laminated paper and glassine
10	Grade C, Type I, Class 1	Kraft and film, reinforced, waxed
11	Grade C, Type I, Class 2	Scrim and film, waxed
12	Grade C, Type II, Class 1	Scrim and film, waxed
13	Grade C, Type II, Class 2	Scrim and film, waxed
14	Grade C, Type III, Class 2	Kraft paper, waxed, creped



2. REAR VIEW of development prototype of pliability tester, showing the motor-driven plunger with hemispherical head.

pers and similar materials include such characteristics as stiffness, bending strength, softness, texture, elasticity and thickness. These can be measured with rather basic apparatus. Use properties, however, are measured by instruments developed mainly to simulate the conditions of use.

Pliability is a use property and is a combination of several fundamental properties, including rigidity, stiffness, bending strength, softness, stretch, elasticity, thickness, weight, folding strength, smoothness, flexibility and surface friction.

This property of pliability may be defined as the ease with which a material can be molded to conform to an object being wrapped, or its resistance to a wrapping operation.

During World War II, an attempt was made to insure the receipt by military depots of materials with desirable use characteristics by including in the specifications certain requirements for *spring-back* and *self-adherence*. These requirements encouraged the use of those materials which had a tendency to stay in place when folded or when wrapped around an item. It was hoped that the angle of spring-back was an indication of the force which the material exerted against the hands of the packaging

TABLE II—PLIABILITY READINGS FOR SECOND SERIES OF TESTS

Material Specimen No.	No.	Instrument readings (lbs.)		Deviations from average reading (lbs.)		% deviation		Probable error (lbs.)	
		Up	Down	Up	Down	Up	Down	Up	Down
1	1	10.0	12.4	2.2	0.9	18	8		
	2	12.2	12.0	0.0	0.5	0	4		
	3	11.0	10.2	1.2	1.3	10	11		
	4	12.7	12.0	0.5	0.5	4	4		
	5	15.1	11.1	2.9	0.4	24	3		
2	1	8.0	9.0	0.4	0.1	5	1		
	2	9.1	9.2	0.7	0.1	8	1		
	3	8.6	10.0	0.2	0.9	2	10		
	4	7.0	9.0	1.4	0.1	2	1		
	5	9.4	8.5	1.0	0.6	1	7		
3	1	7.0	8.9	0.1	1.2	1	16		
	2	7.2	7.9	0.3	0.2	4	3		
	3	6.5	7.0	0.4	0.7	6	9		
	4	6.9	7.0	0.0	0.7	0	9		
	5	7.1	7.5	0.2	0.2	3	3		
4	1	7.3	8.1	0.7	0.2	9	2		
	2	9.5	8.0	1.5	0.3	19	4		
	3	9.0	8.1	1.0	0.2	13	2		
	4	6.2	9.0	1.8	0.7	22	8		
	5	8.0	8.5	0.0	0.2	0	2		
5	1	8.9	11.5	0.5	0.8	5	7		
	2	8.6	10.5	0.8	0.2	9	2		
	3	9.4	12.0	0.0	1.3	0	12		
	4	12.0	9.4	2.6	1.3	28	12		
	5	8.2	10.0	1.2	0.7	13	7		
6	1	4.0	5.9	1.1	0.2	22	4		
	2	7.0	5.8	1.9	0.1	37	2		
	3	3.8	5.5	1.3	0.2	26	4		
	4	6.0	5.7	0.9	0.0	18	0		
	5	4.8	5.8	0.3	0.1	6	2		
7	1	3.0	4.3	0.7	0.2	19	5		
	2	3.1	4.0	0.6	0.1	16	2		
	3	4.0	4.0	0.3	0.1	8	2		
	4	4.3	4.0	0.6	0.1	16	2		
	5	4.0	4.2	0.3	0.1	8	2		
		3.7	4.1	2.5	0.6	13.4	2.6	0.2	0.1

(Table II continued on facing page)

personnel or its resistance to being conformed around an object.

Experience has proved, however, that these requirements are an inadequate measure of the stiffness or pliability of a wrapping material. In fact, it was found that in order to meet the spring-back requirements of the specification, some suppliers added a lamination which resulted in an even stiffer and less desirable sheet. Conversely, some of the more flexible, creped and otherwise highly desirable

materials had to be rejected because of a high angle of spring-back.

Picatinny Arsenal of the Army's Ordnance Corps determined that this problem warranted special attention and selected our firm to make a study of existing instruments which might insure acceptable materials.

Development work

A survey revealed that there were 21 instruments or methods which might be considered suitable for

TABLE II (continued)

Material Specimen No.	No.	Instrument readings (lbs.)		Deviations from average reading (lbs.)		% deviation		Probable error (lbs.)	
		Up	Down	Up	Down	Up	Down	Up	Down
8	1	4.8	6.0	0.4	0.2	3	8		
	2	4.9	5.8	0.3	0.0	0	6		
	3	6.0	5.7	0.8	0.1	2	15		
	4	4.7	5.5	0.5	0.3	5	10		
	5	5.6	6.0	0.4	0.2	3	8		
9		5.2	5.8	2.4	0.8	2.6	9.4	0.2	0.1
	1	6.3	4.2	1.0	0.8	19	16		
	2	4.0	4.8	0.7	0.2	13	4		
	3	6.0	5.0	0.7	0.0	13	0		
	4	5.0	6.0	0.3	1.0	6	20		
10		5.4	5.2	0.1	0.8	2	16		
		5.3	5.0	2.8	2.8	10.6	11.2	0.2	0.2
	1	9.7	13.1	0.5	2.2	5	14		
	2	10.4	14.1	1.2	1.2	13	8		
	3	7.2	16.5	2.0	1.2	22	8		
11		9.6	18.6	0.4	3.3	4	22		
		9.1	14.1	0.1	1.2	1	8		
		9.2	15.3	4.2	9.1	9.0	12.0	0.4	0.8
	1	22.7	22.3	2.2	1.5	8	6		
	2	23.6	20.1	1.3	3.7	5	16		
12		27.4	27.4	2.5	3.6	10	15		
		25.9	24.3	1.0	0.5	4	2		
		24.8	24.9	0.1	1.1	0	5		
		24.9	23.8	6.7	9.0	5.4	8.8	0.6	0.8
	1	6.0	10.0	0.3	2.7	5	37		
13		5.7	5.0	0.6	2.3	10	31		
		5.3	6.5	1.0	0.8	16	11		
		8.9	7.4	2.6	0.1	41	14		
		5.5	7.6	0.8	0.3	13	4		
		6.3	7.3	5.3	6.2	17.0	19.4	0.4	0.5
14		6.9	6.0	0.2	0.2	3	3		
		8.0	6.0	0.9	0.2	13	3		
		8.0	6.0	0.9	0.2	13	3		
		6.5	6.0	0.6	0.2	8	3		
		6.3	7.0	0.8	0.8	11	13		
Averages		7.1	6.2	3.4	1.6	9.6	5.0	0.3	0.1
	1	9.0	11.0	0.5	0.4	6	4		
	2	8.0	11.2	0.5	0.4	6	4		
	3	8.0	10.9	0.5	0.3	6	3		
	4	8.9	9.5	0.4	1.1	5	11		
Averages		8.5	10.5	0.0	0.1	0	1		
		8.5	10.6	1.9	2.3	4.6	4.6	0.2	0.2
Averages		8.6	9.4	0.4	0.3	9.7	7.5	0.3	0.3

evaluating the stiffness of military barrier materials, but many of these have not found general favor.

One authority has recently concluded that only six methods are in current use to measure stiffness of paper and similar materials. A recent study of instrumentation by the Institute of Paper Chemistry lists only four instruments as being worthy of consideration in measuring stiffness or softness. Three of the instruments of this type were also considered.

Each instrument was studied from the standpoint of its purpose, principle of operation, operating procedure and property measured. An engineering analysis was made and it was determined that none of the existing instruments is acceptable as a means for testing the pliability of barrier materials used in military packaging.

Existing instruments are believed to be not especially applicable to the multiplicity of new materials used for military barriers, such as coated and

impregnated papers, reinforced papers, plastic films and laminates of paper, plastic and metal foils. Nor do existing instruments which measure such properties as stiffness, softness and flexibility provide the necessary quantitative measure to insure materials with an acceptable pliability.

Being convinced that the only real indication of pliability must be obtained by simulating the actual conditions of use, Picatinny Arsenal authorized development of a prototype instrument which would simulate actual conditions of wrapping a material about an item or package and would measure the resistance to this simulated wrapping operation. It was necessary to measure the force required to flex the material in all directions simultaneously in the general manner of crumpling a wrapping material about an object.

It is not surprising that previous work has not been done in this field, since the science of military packaging is in its relatively early stages. Since this instrument was particularly aimed at determining the suitability of barrier materials for military wrapping and packaging operations, the problem was unique. It was determined that the initial development of the instrument would be based mainly on greaseproof materials of the type prescribed in Military Specification JAN-B-121.

The contractor conceived that a simple and accurate approach would be to measure the force required to push a flat sheet through a circular ring. A hemispherical plunger (see Figs. 1 and 2) is driven upward through the ring by a geared-down electric motor driving through a "quick-return" linkage. As the plunger carries the sample upward, the ring forces the barrier around the plunger's hemispherical surface in a manner similar to wrapping that surface. The force that the ring exerts in accomplishing this work is a measure of the effort required to wrap the material. This force is supplied to the ring by the liquid-filled bellows. The magnitude of the force is indicated by the pressure gauge connected to the bellows. The gauge is calibrated to indicate the force on the ring in pounds.

The instrument was designed to be self-contained and portable, easy to operate and capable of testing a wide range of stiffnesses. The instrument is powered by normal electrical current and is sufficiently automatic to

TABLE III—SUMMARY OF PROBABLE ERRORS

Material No.	1st series of tests (lbs.)			2nd series of tests (lbs.)			3rd series of tests (lbs.)		
	Up	Down	Av.	Up	Down	Av.	Up	Down	Av.
1	0.5	0.1	0.3	0.6	0.3	0.4	0.4	0.4	0.4
2	0.2	0.1	0.1	0.3	0.2	0.2	0.1	0.3	0.2
3	0.2	0.6	0.4	0.1	0.3	0.2	0.5	0.3	0.4
4	0.5	0.2	0.4	0.4	0.1	0.3	0.4	0.2	0.3
5	0.1	0.4	0.3	0.4	0.4	0.4	0.5	0.3	0.4
6	0.6	0.2	0.4	0.5	0.1	0.3	0.2	0.1	0.1
7	0.7	0.1	0.4	0.2	0.1	0.1	0.5	0.2	0.3
8	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.2
9	0.0	0.2	0.1	0.2	0.2	0.2	0.3	0.2	0.3
10	0.6	0.1	0.4	0.4	0.8	0.6	0.7	0.2	0.4
11	0.3	0.5	0.4	0.6	0.8	0.7	1.8	0.7	1.3
12	0.2	0.2	0.2	0.4	0.5	0.5	0.3	0.5	0.4
13	0.3	0.4	0.3	0.3	0.1	0.2	0.6	0.5	0.6
14	0.1	0.2	0.2	0.2	0.2	0.2	0.4	0.3	0.3
Average	0.3	0.2	0.3	0.3	0.3	0.3	0.5	0.3	0.4

minimize the chance of human errors. The plunger was so powered as to provide an even application of force at a constant speed. The movable ring was accurately counterbalanced and a means was provided for checking the calibration of the gauge.

A prototype instrument was made in which both the movable ring and the plunger head could be removed and replaced with rings and heads of various sizes so as to permit trial of several combinations of sizes in order to find the most satisfactory combination.

Testing program

Preliminary tests were needed to select a ring and head combination and a specimen size which would give greatest consistency in readings and to establish a test procedure which would result in a minimum probable error. It was then necessary to perform several series of tests in order to determine the accuracy, consistency and reliability of the test results.

To select the test specimens, a survey was made of the nation's grease-proof barrier-material suppliers. Fourteen materials were selected as being representative of the various types, grades, classes and constructions used by military departments. The 14 typical barrier materials used in the prototype testing are listed in Table I. They are identified by code number only, since the objective of the testing was to develop an accurate instrument and not to compare materials.

Specimens were circular, 10 in. in diameter, and were conditioned at controlled temperature and humidity. All tests were made under uniform

atmospheric conditions. Ten specimens of each material were tested, five with one side up and five with the other side up.

Extensive data gathered in three series of tests were then analyzed. It was found that the instrument is more consistent than is the material being tested and that the probable error is no greater than the accuracy of the calibration of the instrument gauge.

Typical of the data derived is that shown in Table II, which lists the pliability readings for the second series of tests. Readings were averaged and the deviations from the average readings were studied and probable errors computed.

It can be seen from Table II that average pliability readings ranged from 3.9 to 24.4 lbs. The average deviation from the true reading was only about one-third of a pound.

The probable error in the average of a given number of pliability readings, when compared with the material's actual pliability, can be calculated by the "method of least squares" from the following expression:

$$e = \frac{0.8453}{n\sqrt{n-1}} \sum_{i=1}^n |R_i| \dots \dots \dots (1)$$

Where e = the probable error in the average reading,

n = the number of readings and

$|R_i|$ = the absolute value of the i th reading

Since five readings of a particular material in a particular direction were taken, the probable error in the average reading for these tests is:

$$e = 0.0845 \left[|R_1| + |R_2| + |R_3| + |R_4| + |R_5| \right] \dots \dots (2)$$

As shown in Table III, the average probable error for the three series of tests was only one-third of a pound.

It was noted that there was an occasional bad reading. Eighteen out of 420 readings in the three series of tests deviated from the average by more than 25%, although the average over-all deviation was less than 9%. An added precaution was therefore included in the recommended test procedure to reject individual readings when the deviation is more than 25% from the average of its kind. This procedure will minimize the chance of arriving at an unfair value for a particular material and will reduce the average probable error even further.

Evaluation of materials

Up to this point in the study, the principal objective was to develop an instrument which is reliable, accurate and consistent. It was not to study the properties of a particular group of materials or to compare the properties of different materials. Picatinny Arsenal was now convinced that a need exists for a new method to measure the suitability of materials for wrapping operations and that no existing instrument is especially suited for evaluating wrappability.

It had been demonstrated that the prototype pliability tester developed by the contractor might fulfill the needs of the military departments. It was now necessary to turn attention to the materials themselves to evaluate existing materials from the standpoint of their pliability. It was also desirable to study any correlation which may exist between the results obtained with the Pliability Tester and other similar tests.

A comprehensive evaluation and testing program was carried on by the contractor with materials obtained from all known suppliers of grease-proof barrier materials of the type covered by Military Specification JAN-B-121. Seventy materials were evaluated, including all types, grades and classes, and all types of construction, and representing the products of 18 suppliers. The materials were tested for compliance with all of the specification requirements. In addition, tests were run with the Pliability Tester and with one of the most commonly used stiffness-testing instruments.

The analysis of data has not yet been completed and therefore cannot (This article continued on page 174)

Insectproofing of foods

Mechanical exclusion with well-designed, tightly glued package

is best bet; chemical treatment can help. By H. E. GRAY*

The infestation of food packages by insects is a recurring problem for the processor of cereal products. It occurs most commonly during the shelf-life period in the premises of the retailer. The manufacturer must not only turn out a material that is free from insects at the time of packaging, but he must also use containers that are highly resistant to insect attack if his product is to be accepted by the public.

The packaging of cereal products has undergone much change during the 20th century. The average size of the package has been greatly reduced. After the introduction of paper containers in the '20s, their use has gradually increased until today they are the most popular type. Changes in our living and food-buying habits have been responsible for many of the trends in packaging. The present popularity of the pre-mix food packages is a good example of the streamlining of home food preparation.

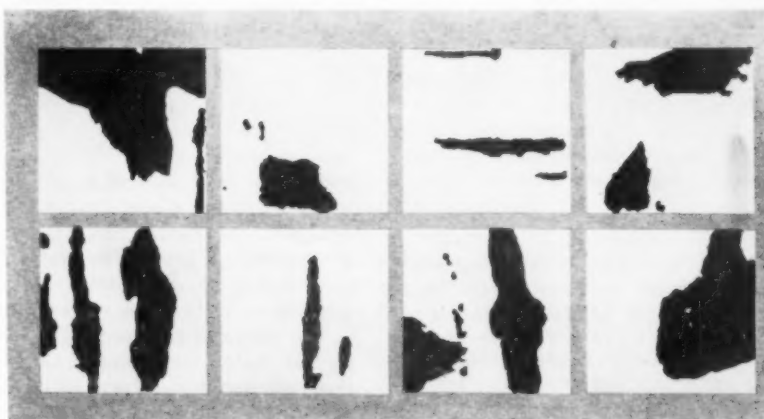
During the past half century the public has become increasingly conscious of insect pests that contaminate food. This has prompted food manufacturers to put their products in better containers. The activities of the food and drug officials and the widespread program of food-plant sanitation in North America have also increased the interest in insectproof packaging.

Pre-mix food packages

The preparation of mixtures of baking ingredients in ready-to-use form is now an important industry. The manufacturer of pre-mix foods has two important problems to solve: (a) the prevention of rancidity and (b) the prevention of insect penetration. Both of these problems are closely related to shelf life. Carlin (1)† found that

* This article is reprinted by permission from a paper delivered at the 40th Annual Meeting of the Technical Assn. of the Pulp & Paper Industry, New York, Feb. 24, 1955. This is Contribution No. 3275 of the Entomology Division, Science Service, Canadian Department of Agriculture, Toronto, Ont. Mr. Gray is Head, Stored Product Insect Unit.

† Numbers in parentheses identify References appended.



INCOMPLETE SEALING of carton flaps at glue contacts is one of biggest problems in insect control. This photograph shows typical glue contacts (in black) between short side flaps and long inner flap on pre-mix food packages. Note smallness of the area of glue contact.

suitable liners that prevented the contact of fats and oils with the cardboard shell greatly increased the shelf life of fats and fat-containing foods. For the pre-mix food package a liner is essential.

Types of containers. During the past five years many pre-mix food containers have been examined at the Ottawa laboratory. In general they fall into three main types: (a) lithographed cartons, (b) lithographed cartons with a transparent overwrap and (c) a plain shell with a lithographed overwrap.

In the first group the protection of the product from insect contamination depends very largely on the tightness of the closure of the carton. This is the cheapest type of package. Some of those examined were extremely poorly designed and poorly sealed.

The second type is similar to the first, save that it has been overwrapped with a transparent film, usually cellophane, which is normally heat sealed. Commercial samples are frequently not well sealed. Rough handling in shipping, particularly in cold weather, often produces breaks in the film.

The plain shell with the lithographed overwrap is usually the best package of the three. Even if the shell is not well sealed, a lithographed overwrap seals the normal points of entry. A really good seal by the use of the overwrap is possible largely because of the even pressure provided by the inner shell.

Package shortcomings make insect penetration easier. The shell blanks are stamped out of standard carton board. Lack of care in the adjustment of the stamping machine, or if the board is even slightly out of line, will produce substandard cartons with small openings that are readily found by stored-product pests.

The gluing of the side joint to form the carton is another operation that must be carried out carefully. If the joint is out of line, the flaps that form the bottom and top will not fit together properly and a corner opening will be present.

Gluing the flaps. The glue contacts on the bottom of a lithographed carton are usually superior to those made on the top after the package is filled. In many cases the bottom seal is made on a form that affords a steady

pressure from within. Much of the difficulty in securing a good top seal is the lack of pressure from within the package. From an examination of a large number of pre-mix packages, the writer feels that lack of glue is responsible for many of the poor seals. Proper sealing of packages is most important in preventing insect penetration. Packaging machinery must receive adequate attention to maintain it in proper working condition. Too often adjustments are made only when the equipment is functioning very poorly.

Hand sealing vs. machine sealing. The question may be asked: Is it possible by any method to seal pre-mix

food packages tightly enough to prevent insect penetration?

When packages were hand sealed in the laboratory the degree of penetration was lower than that in machine-sealed packages. Machine sealing varies in efficiency throughout the run. A constant check must be maintained at all times to insure that the packaging machine operates at peak efficiency.

A package infestation survey. An analysis was made of a large file of data accumulated by one of the larger manufacturers of pre-mix foods in the United States. This company regularly picks up samples of its products from retail stock at random throughout the country. These packages are examined for insect infestation and for packaging faults. The data afforded a good cross-section of the pests most likely to be encountered.

The information showed that species of insects vary considerably in their abilities to penetrate packages. The species found in hot-roll-mix packages are arranged in order of frequency of occurrence in Table I.

Five common stored-product pests were responsible for over 95% of the infestation. Over half of the infestation was caused by pests that are rarely, if ever, found in flour mills. The two flour beetles are common mill pests, but are also found widely in stored grain, in railroad cars, in warehouses and in retail stores. Almost all of the infestation of pre-mix foods occurs during the shelf life in retail stores. The cadelle, a species that has been used widely in package-testing work, was responsible for less than 1% of the infestation.

What is a reasonable objective in the exclusion of insect pests? We should all like to have a cheap container that would be proof against all insect pests. At present that is an ideal that can be attained only by the use of metal cans or glass containers. Neither of these containers is cheap or available in sufficient quantity; hence, it will be necessary to improve our present containers to meet our needs.

Package improvement. It was felt that improvement in the present type of packages could best be brought about by treating them with chemicals that would reduce insect penetration by either killing or repelling the insect pests.

A variety of chemicals (2-9) have been used by different investigators

for the treatment of food containers. The ideal material would be non-toxic to humans and at the same time highly toxic or repellent to all stored-product pests. Furthermore, the treatment must not affect the appearance of the food container. A survey of available materials showed that a piperonyl butoxide-pyrethrins mixture appeared to be the most promising for insectproofing of food containers.

Experimental procedure

Scope of experiments. One of the practical objectives of the tests was to determine whether chemical treatment of the lithographed type of

TABLE I—OCCURRENCE OF INSECT SPECIES IN HOT-ROLL-MIX PACKAGES OF A LEADING MANUFACTURER IN RETAIL STOCKS IN THE UNITED STATES, 1949

Species	No. of times found	%
Saw-toothed grain beetle, <i>Oryzaephilus surinamensis</i> (L.)	114	35.9
Confused flour beetle, <i>Tribolium confusum</i> (Duv.)	91	28.6
Indian-meal moth, <i>Plodia interpunctella</i> (Hbn.)	45	14.2
Larder beetle, <i>Dermestes lardarius</i> (L.)	27	8.6
Red flour beetle, <i>Tribolium castaneum</i> (Hbst.)	25	7.9
Cadelle, <i>Tenebroides mauritanicus</i> (L.)	3	0.9
Miscellaneous (dermestids, ptinids)	6	1.8
Accidentals	7	2.1
Total	318	100.0

TABLE II—RATINGS (100% = 60) OF VARIOUS CONCENTRATIONS OF PYRENONE SOLUTIONS IN PROTECTING PRE-MIX FOOD PACKAGES AGAINST INSECT PENETRATION WHEN ROLLER TREATED WITH 2cc. EACH

Dilution	Formulation		
	50-5	30-5	20-5
1-2	60	60	60
1-5	55	55	50
1-10	—	60	10
1-10	38	—	—
1-20	44	38	38
1-50	44	36	30
1-100	—	38	52
1-200	—	52	52
Check	14	14	14

TABLE III—RATINGS (100% = 60) OF VARIOUS AMOUNTS OF PYRENONE SOLUTIONS (FORMULATION 50-5) IN PROTECTING PRE-MIX FOOD PACKAGES AGAINST INSECT PENETRATION

Dilution	Amount applied cc.		
How treated	1-5	1-10	
With roller			
Top and bottom only	1.25	50	52
Top, bottom and two sides	2.0	53	38
Top, bottom, two sides, front and back	3.0	60	60
Check	0.0	12	12
Hand brushed			
Junction of top and sides	0.8	—	52

TABLE IV—THE EFFECT OF FOOD ON THE RATINGS (100% = 60) OF PYRENONE SOLUTIONS (FORMULATION 50-5) IN PROTECTING PRE-MIX FOOD PACKAGES AGAINST INSECT PENETRATION

How treated	With food	Without food
Roller treated		
Top, bottom and two sides, 2 cc. each		
Dilution 1-10	53	45
1-20	45	44
1-50	18	41
Hand brushed, 1-10 dilution		
Junction top and sides		
Band 1 in. wide	12	30
Band 2 in. wide	18	60
Band 4 in. wide	6	58
Check	16	28
Average of all treatments	25	46
Commercial production procedure	20	34

package would render it sufficiently free from insect penetration to avoid the necessity of using an overwrap.

Tests were carried out to determine the effect of treatment with different concentrations of different Pyrenone formulations in preventing penetration of pre-mix food packages by common stored-product insects. The effect of applying different amounts of Pyrenone was also studied. Some tests were run with packages in which 0.85% Pyrenone had been incorporated into the glue; tests were run on the packages as received and after treatment with Pyrenone solution. A series of tests was also carried out to determine the effect of insect food supply on the protection afforded by Pyrenone against penetration by insects.

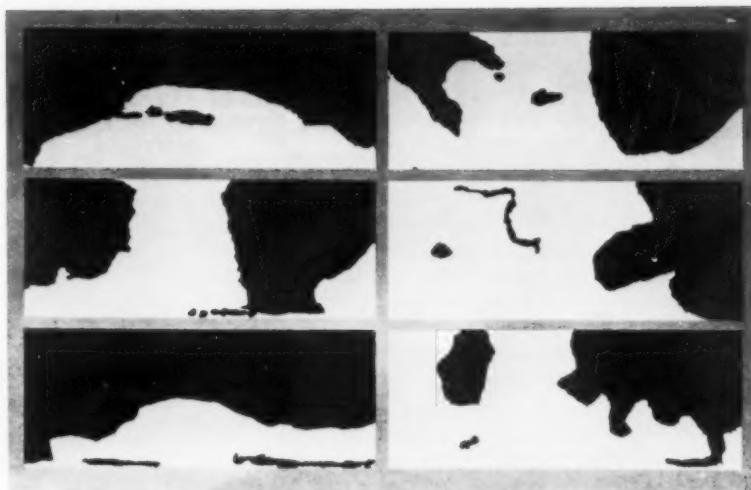
Some studies were carried out in cooperation with a leading Canadian firm of coaters of fibreboard and similar products to determine whether Pyrenone could be successfully incorporated into varnishes and lacquers used in finishing.

Because of the cost of natural pyrethrum, a few tests were also run with solutions in which pyrethrin substitutes were used in place of pyrethrins. Everban F1001 was used for the tests.

Materials. Through the courtesy of the United States Industrial Chemical Co. a series of Pyrenone (piperonyl butoxide-pyrethrins mixture) formulations was made available. These are referred to as 50-5, 30-5 and 20-5. In each case the first figure is the amount of piperonyl butoxide and the second the amount of pyrethrins expressed as gms. per 100 cc. These concentrates were diluted with Shell odorless base oil. United States Industrial Chemical Co. also furnished Pyrenone in a suitable form for incorporation into varnishes and lacquers.

National Starch Products, Inc., furnished a supply of Beetle-Pel WA adhesive, which contained 0.85% of Pyrenone. This was used to test the effect of the incorporation of Pyrenone into the adhesive used in sealing the packages.

A supply of Everban F1001 was furnished by McLaughlin Gormley King, Minneapolis, Minn. This product contains allethrin and an activator or extender. The concentrate was diluted with Shell base oil at the rate of 1-10, 1-20 and 1-50 and applied by the roller technique.



UNGLUED AREAS of flaps offer insects access to the contents of food packages. Photograph shows typical glue contacts (in black) between the inner and the outer flaps of six different pre-mix food cartons.

Much of the experimental work was carried out with lithographed cartons. A large number of filled packages of cake mix were supplied by a leading Canadian milling company.

Applying Pyrenone solutions. In most of the tests the solutions were applied by means of a special applicator. This consisted of a set of 12 rubber rollers, 1 in. in diameter, mounted in a metal frame. The frame was placed in a shallow metal pan filled with sufficient of the Pyrenone-oil mixture to cover the lower surface of the rollers. The packages were treated by a single pass over the rollers of the surfaces to be treated. Before treating the first package of each lot, a blank package was passed over the rollers to coat them with the solution.

After the treatment of a set of packages with a particular dilution, the solution was returned to a stock bottle. The rollers, stand and tray were then washed with soap and water, rinsed and dried.

In some tests the solutions were applied to small areas on the packages with a sash brush.

Drying. After treatment, the packages were placed on coarse screen trays and allowed to dry for 24 hrs. before testing.

Exposure. After drying, the cartons were placed in test cabinets approximately 6 ft. long and with a cross-section of about 30 in. square. The cartons in any test chamber were ar-

ranged in series to facilitate removal at intervals of two, four, six and eight months. As a result, some of the packages in any set were placed at four different places in the cabinet.

As the highly concentrated solutions killed all of the test insects in the cabinet, the packages treated with solutions of 1-2 and 1-5 were placed in individual metal containers for all but the first few weeks of the test.

Test insects. The test material was kept at room temperature in chambers containing large populations of five species of stored product pests: the saw-toothed grain beetle, *Oryzaephilus surinamensis* (L.); the Indian-meal moth, *Plodia interpunctella* (Hbn.); the confused flour beetle, *Tribolium confusum* (Duv.); the black carpet beetle, *Attagenus piceus* (Oliv.); and the Mediterranean flour moth, *Ephestia kuehniella* (Zell). About 12 months after the start of the work, the last two species were no longer used because of the few entries they made.

The supply of insects was renewed each month. In many of the tests, food was supplied in dishes in the cabinet. When food was supplied, a thin layer was also scattered over the tops of the cartons.

Examining the packages. The packages were opened by cutting completely around each box about 1/2 in. below the top with a razor blade. A cut at this point did not damage the liner and permitted the removal of the liner and its contents intact.

Each shell was examined for in-

sects as well as for pinholes and package defects. A binocular loupe was used for much of the examination. The surface of the liner was then checked for holes and for insects. The liner was then opened and the contents were examined.

The glue joints, between the short side flaps and the long inner flap and between the long inner and outer flaps, were broken on both the top and bottom of the package. The percentage of glue contact in each case was estimated by a transparent scale.

Numerical rating. The packages were rated on the basis of package-months free from penetration. Each package showing no penetration at the end of two months was credited with two points, at the end of four months with four points, at the end of six months with six points, and at the end of eight months with eight points. In most cases the tests were carried out for eight months and three samples were withdrawn on each examination. In this case a perfect score would be 60 points. In a few cases the tests were terminated at six months, when a total of 36 represented a perfect score.

Results and discussion

The tables herewith indicate the more important trends. The word "trends" is used advisedly because the results are not as clear cut or precise as one hopes to secure in experimental work. The data selected are typical, all representing a considerable number of tests. In each case the results used were obtained in the same test cabinet, as it is not always possible to compare the results secured from different test runs.

An uncontrollable variable is the inherent difference in the tightness and efficiency of the sealing of the individual packages. The packages are stamped on machines and formed and sealed on still other machines, all of which require adjustment and maintenance. Some of the packages are better than others, but there is no way of determining which are superior, average or poor until the test is over. In one series, at the end of two months' testing every package in the experimental lot from one stamping machine had a small opening in the upper right-hand corner. All of these packages had been penetrated. For this reason it is important to check the shells carefully for holes, defects and percentage of glue contact.

TABLE V—THE EFFECT OF FOOD ON THE ORDER OF IMPORTANCE OF TEST INSECTS IN THE PENETRATION OF PRE-MIX FOOD PACKAGES TREATED WITH PYRENONE SOLUTIONS

	With food	Without food	Total
No. of packages	132	132	264
No. penetrated	61	34	95
% penetrated	46	26	36
Present by %			
Saw-toothed grain beetle	93	53	80
Flour beetles	30	62	43
Indian-meal moth	6	9	6

Effect of concentration. The results secured on the effect of concentration of Pyrenone in protecting pre-mix packages from insect penetration are shown in Table II. This table is divided into two parts. The portion above the horizontal line gives the results with high concentrations and the lower portion those with more dilute solutions. The 1-10 dilutions are not strictly comparable because of the method of handling (see above, under "Exposure").

When packages are treated with the higher concentrations of Pyrenone, the test insects are killed by contact with the treated surfaces. This action has also been noted in the testing of treated paper and cotton flour sacks in both laboratory and warehouse.

All of the penetrated packages treated with the 1-10 dilution of formulation 20-5 showed evidence of poor sealing and the presence of entrance channels.

At lower concentrations Pyrenone appears to exert a repelling rather than a toxic action. There is apparently no clear relationship between concentration and the amount of protection afforded. All of the treatments afforded greater protection than the untreated check.

TABLE VI—RATINGS (100% = 60) OF VARIOUS DILUTIONS OF EVERBAN 1001 IN PROTECTING PRE-MIX FOOD PACKAGES AGAINST INSECT PENETRATION WHEN ROLLER TREATED WITH 2 cc. EACH

Dilution	
1-10	54
1-20	52
1-50	60
Check	14

Effect of amount applied. The manufacturer is interested in knowing how much Pyrenone he should use to protect his packages from insect penetration. The data in Table III give some indication of the necessary level of treatment. In general, at least 2 cc. of Pyrenone solution (formulation 50-5 diluted 1-10 with a suitable oil) should be applied to each package, particularly at the points of closure.

The packages that were treated on all surfaces were not penetrated. Those receiving only partial coverage were protected to a material extent, but not strictly in proportion to the amount applied. They were all much better than the controls.

Method of application. In the experimental studies most of the Pyrenone was applied by the roller method. In some cases a brush was used to concentrate the Pyrenone at the points of closure.

The method of application merits further investigation. To satisfy the manufacturer it must be mechanized, fast, effective and economical. Furthermore, the equipment must not take up very much space because it must fit into the packaging line between the sealing of the packages and their packing in cartons for shipment.

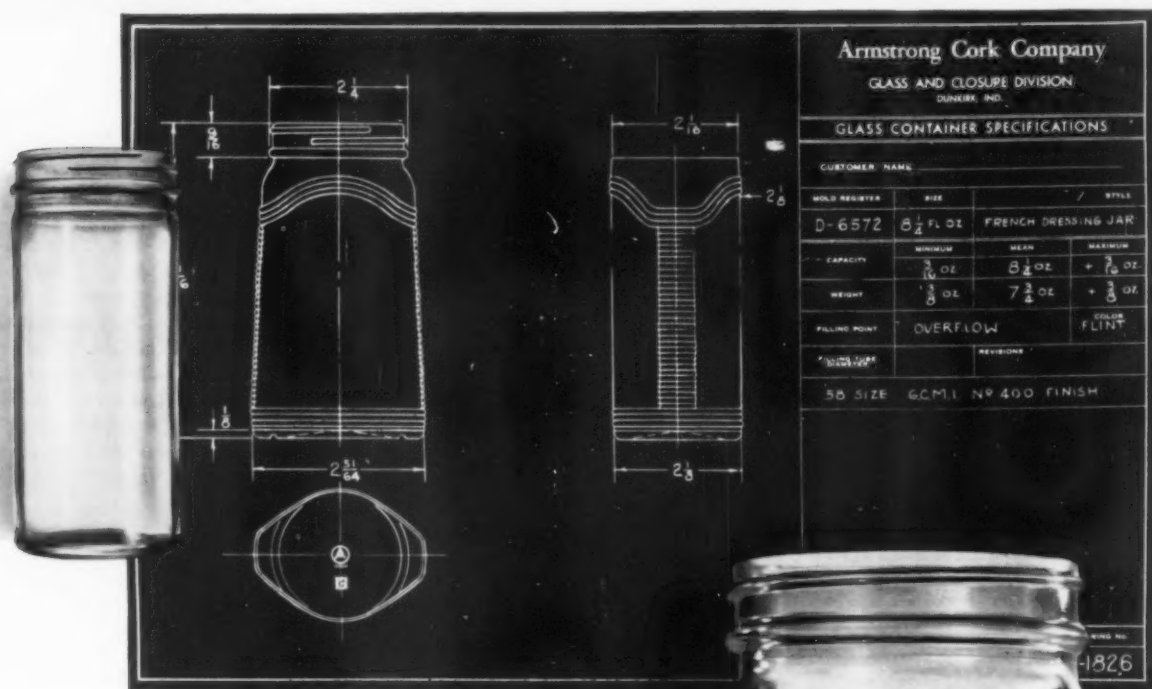
Glue containing Pyrenone. Pre-mix food packages that were sealed with glue containing Pyrenone were penetrated about half as frequently as those sealed with ordinary glue. The resistance of the packages sealed with the glue containing Pyrenone to insect penetration was further increased when a 1-10 solution of Pyrenone (formulation 50-5) was applied to the two sides, top and bottom of the package.

Effect of food on chemical protection. In general, when suitable food was present near pre-mix food packages, there was more penetration of the packages than in its absence (Table IV). On the average, almost twice as many penetrations occurred when food was present.

Order of importance of test insects. In attempting to evaluate penetration tests, they must be studied in the light of the species used. Different species vary in their biology and conditions that are favorable for one may not be so for others.

In these tests (Table V) the saw-toothed grain beetle penetrated 93% of the packages when food was present. (This article continued on page 196)

Design changes create oval jar that stacks



1. Oval shape looks larger . . . takes wider label

2. Recess in bottom allows stacking

This packer wanted a jar that would do two jobs: identify the product faster . . . and encourage maximum display by retailers. He got it—in a new type of jar that takes a wider label, that is easier for grocers to handle because of its handy stacker bottom.

His new jar also looks larger than before. Better, too. Its shape is more interesting to the eye, and the ribs on the sides add decoration, while they also provide a handy non-slip grip.

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Questions & Answers

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Preventing loss of perfume

QUESTION: One of our products is a very delicately perfumed tablet that must be packaged and preserved for up to two years of storage and shelf display. Heretofore we have used only glass containers and results have been very satisfactory. However, we have recently tried to put out a single-tablet package and have had erratic and generally poor results because of off odors and perfume loss. Is there a simple package construction and material that might meet our requirements?

ANSWER: Several phenomena can account for the loss of perfume in the packaged product or the development of unpleasant odors. If the packaging materials are permeable to the perfume, then it can be lost by volatilization and transmission through the package walls and seals. If the perfume is not stable or is susceptible to oxidation, then it can be destroyed in storage with a possibility of resulting unpleasant odors. The third possibility is the development of the unpleasant odors from the package materials themselves. However, this is an easy matter to correct, since the proper choice of materials and components can easily eliminate this hazard. The probability is that your perfume is being lost by transmission through the package walls or openings—particularly since you have a requirement for an unusually long shelf life.

There are many kinds of packaging materials that have a high degree of resistance to the transmission of perfume or volatile organic vapors. However, it is suggested that an aluminum-foil package would be the best answer for a product such as yours, with a long shelf-life requirement.

Since you are interested in a single-tablet package, it is suggested that you use aluminum foil combined with cellulose acetate and a heat-sealed coating. This material is available from many suppliers and can be at-

tractively printed. When it is fabricated into packages with face-to-face, four-sided seals, it is almost completely impervious to moisture or flavor changes and should be ideal for your product and its merchandising requirements.

Protection for baked cereal

QUESTION: We are developing a baked-cereal product that will have a long shelf life. So far we have not solved the packaging problems because some packages appear to induce rancid odors after a few weeks on the shelf. While some materials appear satisfactory, we are unsure of what happens and would like to know how to select a packaging material that we can be sure will not cause rancid odors.

ANSWER: Presumably, the baked-cereal product which you have developed has a reasonable degree of inherent stability so that when it has been properly packaged it will be acceptable to the consumer after a normal shelf life. This assumption is made because unless the product has some degree of inherent stability, it would not be possible for any package material to deliver it to the consumer in an acceptable condition. However, since your product is of a cereal nature and has been subjected to baking temperatures, it can be expected to show some rancidity development during storage in the package. This rancidity is the result of oxidation of fatty portions of the product and can result in the formation of volatile fatty acids which have an unpleasant odor.

Certain classes of packaging materials used in the form of heat-sealed or tightly wrapped packages can prevent escape of these rancid by-products. When this happens there is an unpleasant odor on opening the package. However, it is possible to

choose packaging materials of such a type that these odors do not accumulate and no unpleasant odor escapes when the package is opened.

For cereal products it is suggested that you try waxed papers. If other types of packaging materials are used, it is suggested that you do not make a tight package, but that perforations or loose wrapping be used so that the rancid odors are not confined and accumulated.

Packaging for cake mix

QUESTION: We have a new cake mix that is very highly flavored and has considerable aroma. We are considering a gas or vacuum package to preserve the flavors during storage and shipping. We would like to use some type of bag in a carton. Do you think that vacuum or gas packing is necessary or practical for this type of product?

ANSWER: A gas- or vacuum-packed bag or envelope would unquestionably be effective in preserving your cake-mix product and preventing oxidation and loss of its aroma. Alternately, it would be possible to use certain types of package constructions and certain packaging materials that do not transmit flavors and use heat-sealed constructions to prevent loss by volatilization.

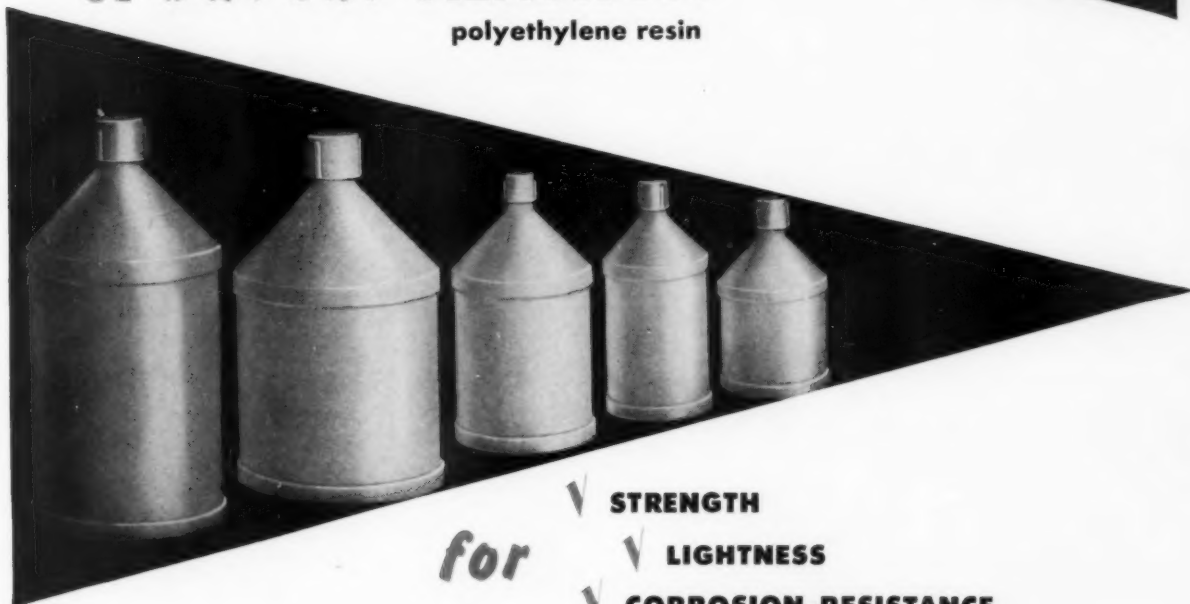
It is suggested that you determine if the flavor component of your product is being lost more rapidly by oxidation or by volatilization and transmission through the walls of the package. If oxidation is the principal cause, then gas or vacuum packaging is a good answer. If the flavor has good stability, then you can find many packaging materials which, when fabricated into tightly sealed bags, should be entirely effective in preventing the loss of flavor and aroma over normal periods of shipping and handling.

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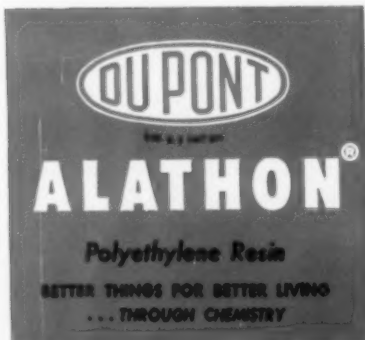
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Equipment and materials

A NEW CRYOVAC PACKAGING MACHINE

designed to reduce operator fatigue and increase speed of vacuum-packaging meat, poultry and dairy products has been announced by the Dewey & Almy Chemical Co., division of

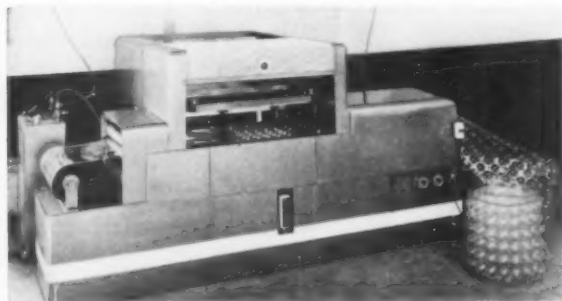


W. R. Grace & Co., 62 Whittemore Ave., Cambridge 40, Mass. This new Model CW-C is semi-automatic. The operator slides the neck of the Cryovac-bagged product over a vacuumizing nozzle which withdraws the air. After vacuumizing, the machine twists the bag neck tightly to seal the package and retain the vacuum. The operator then slides the twisted neck into a clip applicator which automatically fastens the seal with a metal clip and trims away the excess bag end. The product being packaged need never be lifted from the machine's work surface.

A choice of three air-powered clip-applier heads also enables the one machine to package products ranging from a ½-lb. cheese wedge to a 28-lb. turkey. The new machine is housed in a console-type cabinet which can be operated from either a sitting or standing position. The unit operates on 115-volt alternating current and requires 50 lbs. per square inch air pressure.

AUTOMATIC ROLL-FEED VACUUM-FORMING UNIT

for continuous high-speed forming of transparent packaging has been introduced by the Auto-Vac Co., 2120 Post Rd., Fairfield, Conn. Since no operator is required at the machine, it is



possible to synchronize in the line cutting equipment as well as filling, covering and trimming machines. Standard 22-in. rolls of plastic are mounted at one end of the unit and the formed parts are continuously ejected from the opposite end. Draping action is incorporated into the forming operation. Among the materials that the machine will handle are acetate, butyrate, ethylcellulose, vinyl, polystyrene, polyethylene and nylon. With production speeds of four cycles per minute small parts can be produced at the high rate of 50,000 per hour, according to the company.

A NEW VIBRATORY PARTS FEEDER



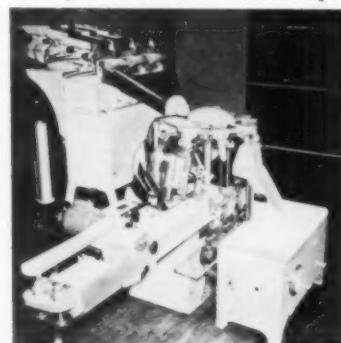
that enables larger, heavier parts to be positioned as required and fed automatically to all types of packaging and processing machines has been developed by the Syntron Co., 250 Lexington Ave., Homer City, Pa. This new Model EB-2-B is equipped with a 30-in.-diameter fabricated

hawl, actuated by an electromagnetic reciprocating motor, will move odd-shaped parts (up to 4 in. long) up and around the spiral track or ramp to the single, double or multiple discharge points. Speed at which parts are discharged is easily regulated to suit processing requirements by adjusting a rheostat in the machine's controller. Operation of the standard unit is 110-60 cycle. It may also be ordered for 220-60 or 440-60 operation.

TWO NEW PACKAGING MACHINES

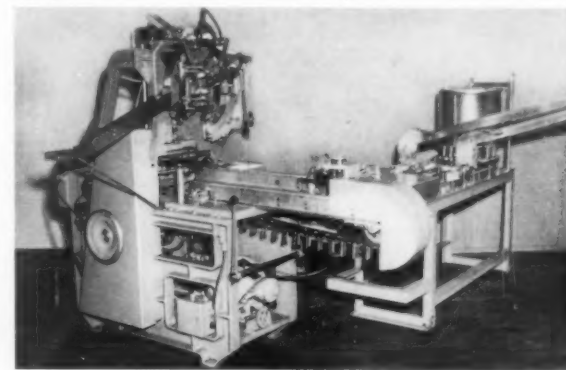
announced by the Wright Machinery Co., a subsidiary of The Sperry Corp., Durham, N.C., are: (1) a machine for automatically weighing and packaging in bags such products as candy, cookies and crackers at speeds up to 60 bags per minute and (2) a machine which automatically stacks, wraps, seals and labels cracker sandwiches at a speed of 120 packages per minute.

The bagging machine, trade named the Wright Bag Master System Model M, enables one employee to monitor two systems. The system consists of a multiple-head weigher, utilizing



Wright's Hy-Tra-Lec patented weighing method which in this instance is fed by "bulk" and "dribble" vibratory conveyors; an automatic bag applicator which positions the bags to receive the weighed charge and an automatic bag transfer which carries the filled bags into a heat sealer. Bag types which can be handled include wax, glassine, cellophane and laminated aluminum foil. Bag specifications are: length, 7 to 12 in.; circumference, 9% to 13 in. or flat measurements of 4% to 6% in. wide.

The sandwich machine, called the Wright Wrap, is said to be some 20% faster in operation than other similar available equipment. All seals are made in conjunction with a fold. The



neater, tighter wrap it gives is said to improve the package's protective qualities and appearance. Its flexibility permits the use of either printed or unprinted cellophane. If printed cellophane is used, a register control is utilized and a pull tab may be provided on the end fold. If unprinted cellophane is used, die-cut, heat-sealing labels are fed. Tear-tape attachment is optional. This machine will handle packages within a nominal width (diameter) range of from 1% to 2 in. and a height range

John Stuart **MILL**
on the training of men

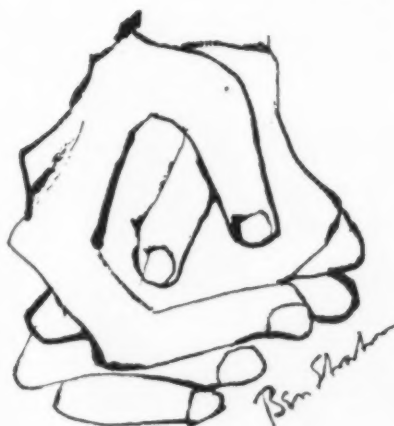


*Men are men
before they are lawyers
or physicians
or manufacturers;
and if you make them
capable and sensible men
they will make themselves
capable and sensible
lawyers and physicians.*

(Inaugural Address at St. Andrews, 1867)

Great Ideas of Western Man . . . ONE OF A SERIES

Container Corporation of America



Artist: Ben Shahn

For **BETTER** package
printing

PAMARCO

FLEXOGRAPHIC and GRAVURE
ROLLS

Precision made by
Cylinder Specialists—

- GROUND FINISH
- DYNAMICALLY
BALANCED
- HIGH GRADE
STEEL TUBING
- ABSOLUTE
CONCENTRICITY
- ACCURATE
DIAMETERS
- NO-FLEX
CONSTRUCTION



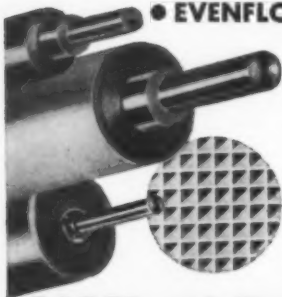
• FLEXOGRAPHIC PLATE ROLLS

Can't flex or whip, assure perfect impressions on every run. Tubular construction reduces weight, tests stronger than solid steel. Ground finish to exact specifications.

• GRAVURE BASE CYLINDERS

PLAIN OR COPPER PLATED — Accurate core or base cylinders for rotogravure process reproduction. Recommended for long service in continuous printing production. Each roll carefully inspected prior to shipment.

• EVENFLO ENGRAVED ROLLS



Precision engraved rolls for the metered application of inks, plastics, adhesives, hot melts and other fluids. Call or write for complete information on economical Pamarco rolls!

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Specify PAMARCO
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| TUBULAR ROLLS | WARM SURFACE ROLLS |
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| IDLER ROLLS | EMBOSSING ROLLS |
| CHILL ROLLS | CHROME PLATED ROLLS |

CHROME PLATING

Highest quality
workmanship. All
work performed in
our own modern
plating department.

STEEL GEARS

Pamarco precision
cut gears insure
accurate register.
Specify them when
ordering rolls.

Equipment and materials

of from 1½ to 2½ in. Most customers pack four sandwiches to the package, Wright reports. A unique device stacks the sandwiches vertically after they leave the sandwich-making machine and feeds them into the Wright Wrap proper under the fold box. Cellophane is fed continuously from a roll and is cut by a rotary knife. Completed packages are discharged horizontally to a carry-away conveyor.

POLYSTYRENE CAPS WITH CONICAL LINERS

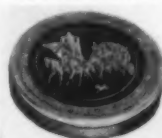
have been added to the line of Poly-Ethy-Lined closures produced by the Poly-Seal Corp., 405 Lexington Ave., New York 17. These closures are designed primarily for the chemical in-



dustry, where shipping mineral acids has heretofore been a problem. They come in 38- and 28-mm. sizes, in 430 finish. The patented cone-shaped liner is reported to eliminate back-off, binding and leakage.

Also introduced by the Poly-Seal Corp. is a novel "Poly-seal" molded, one-piece polyethylene liner-applicator, with or without a brush. The applicator can be merely dropped onto the container finish and the cap applied, eliminating the necessity of applicator assembly on the line.

HAMMERED ALUMINUM GIFT TINS



have been announced by Weinman Bros., Inc., 3260 W. Grand Ave., Chicago 51. The side walls and covers are in natural, silvery aluminum color with the backgrounds of the decorative designs brought out in contrasting copper finish. All motifs are tooled in deep relief and are hand antiqued to bring out details. The cans are available in any diameter in heights ranging from ¾ in. to 3 in.

A VIBRATING TABLE

that is electrically powered has been announced by the Cleveland Vibrator Co., 2828 Clinton Rd., Cleveland 13, Ohio. The table can be used for compacting, settling and filling operations either on an assembly line or independently. The table's reported vibration of 3,600 times a minute provides an impact force in the larger models of 1,440 lbs. The steel tables are fabricated to order and are available with steel or wood tops. The electric vibrating unit is available in three sizes.

PRESCRIPTION VIALS WITH A TIMING DEVICE



on the closure which, when set, reminds the prescription user when the next dosage is due have been introduced by the Celluplastic Corp., 50 Ave. L, Newark 5, N. J. This Clear-site "Clock Closure" vial features quick, simple operation and readability. To set it, an arrow is turned to the correct time. Each hour is designated by a large, raised number and

MODERN PACKAGING



think of ***Kaiser Aluminum Foil***

1. Unmatched for eye-appeal
...sales-appeal
2. Resists moisture vapor
3. Won't absorb liquids
4. Clean and non-toxic
5. Blocks heat and light rays
6. Imparts no taste or odor
7. Bars contaminants

Leading converters rely on Kaiser Aluminum as a major supplier because we are an integrated operation, producing foil of *unsurpassed quality* in a wide range of specifications.

For names of converters eager to tackle your packaging problem, contact the Kaiser Aluminum sales office listed in your telephone directory. Kaiser Aluminum & Chemical Sales, Inc. *General Sales Office*, Palmolive Bldg., Chicago 11, Illinois; *Executive Office*, Kaiser Bldg., Oakland 12, California.

NON-SKID INK

Reduces sliding and shifting of bags when printed with HYDRY non-skid ink

This new odorless, fast drying ink is available in any range of colors. HYDRY non-skid inks provide a built-in non-skid surface for paper bags, sacks, corrugated cartons and other packages. HYDRY ink is an effective solution to many problems of package handling. Write for samples and details.

A Division of  Chemical Corporation



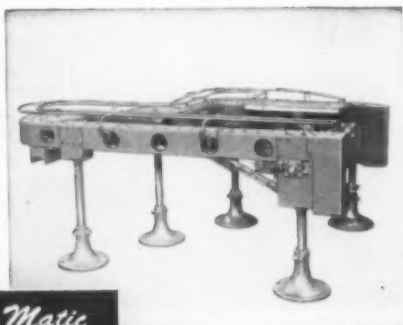
General Printing Ink Company

10th Street and 44th Avenue
Long Island City 1, New York

DIVISIONS OF SUN CHEMICAL CORPORATION

ROHM • HUDSON • WILLEY (paints, maintenance and construction materials, industrial coatings) • WARWICK (textile and industrial chemicals) • WARWICK WAX (refiners of specialty waxes) • RUTHERFORD (lithographic equipment) • SUN SUPPLY (lithographic supplies) • GENERAL PRINTING INK (Sigmund Ullman • Fuchs & Lang • Eagle • American • Kelly • Chemical Color & Supply Inks) • MORRILL (news inks) • ELECTRO-TECHNICAL PRODUCTS (coatings and plastics) • PIGMENTS DIVISION (pigments for paints, plastics, printing inks of all kinds)

**Reduce
Handling
Costs!**



**Styl-O-Matic
LATERAL CURVE
BOTTLE & CONTAINER
CONVEYOR**

**KEEPS PRODUCTION
FLOWING SMOOTHLY**

A VERSATILE, economical unit for the food, dairy, beverage, etc. field. Conveys in straight line, around curves (0° to 180°) and up or down normal inclines or declines. Available in steel or stainless steel, with or without pack-off tables. Only one power unit is needed as there are no corner brackets.

WRITE FOR FREE BULLETIN

about this flexible, smooth operating unit that lowers costs and increases production.
Ask for Bulletin No. ST-1. Dept. MP-7



ISLAND EQUIPMENT CORP.
27-01 Bridge Plaza North
Long Island City 1, N. Y.

Equipment and materials

when the cap is removed, the time indicator remains fixed. The caps come in a variety of colors to help the user identify each prescription when he is taking several at once. The vials themselves are specially treated for "quick stick" labeling.

FORMING HANDLES IN CORRUGATED CARTONS

can be accomplished by a new device introduced by the Handi-Hold Carton Punch Co., 1900 E. Jefferson Ave., Detroit 7,



Mich. The machine cuts single-wall or multiwall cartons of the maximum weight test boards in general use. Foot operated, the sturdy, durable unit is equipped with a safety lock and weighs only 10 lbs. In a single, simple operation,

the device cuts through container sides and inverted top flaps, transforming used cartons of any size to carrying cases.

A NEW PRECISION IMPRINTING UNIT

designed for attachment to all makes of wrapping machines for printing code dates and other identifying legends on package wraps has been announced by Adolph Gottscho, Inc., Hillside



5, N. J. This Model 742 Rola-printer machine is solenoid operated and makes use of an actuating device, thus enabling an infinite number of printing repeats to suit any cut-off length without changing the imprinting cylinder or die wheel, according to the company. This principle of operation is said to assure a high degree of accuracy in positioning in pre-selected

locations on the web whether the wrapping-machine operation is continuous or intermittent. Basic flexographic printing is employed, thus enabling the use of fast-drying inks. Type or die changes are quickly made and end-of-day clean-up requires only 5 min., the company reports.

A NEW SERIES OF VIBRATORY TABLES

designed for maximum efficiency in compaction, separation, proportioning and cleaning operations has been introduced by Vibro-Plus Products, Inc., 54-11 Queens Blvd., Woodside,



N. Y. The tables are adaptable to conveyor and other handling applications of solids and free-flowing materials. The new EMB-6 type consists of a circular, surfaced table top. The lower section, of cast iron, contains an electromagnetic EM-type vibrator and is supported on rubber feet. Amplitude adjustment is controlled from a separate box containing rheostat and switch. Dimensions are: over-all height, 5 in.; diameter of table top, 20 in.; weight, 120 lbs. The

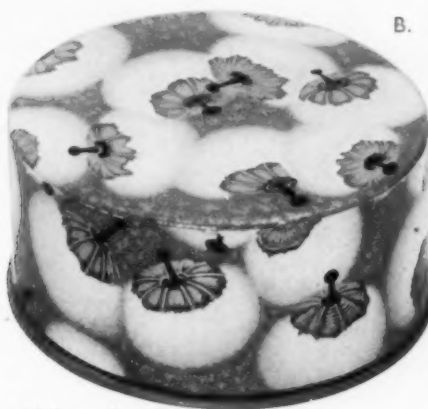
ERB type consists of a heavy-gauge steel table top strongly braced and spring mounted on a vibration-free steel base. This type comes in two standard dimensions, one with 35½ in. square table at 13½ in. height, the other with 19½ in. square table at 12½ in. height. Weights are 331 and 187 lbs., respectively.

A NON-FLAMMABLE HEAT-SEAL ADHESIVE

called "Heat Stick #2" is recommended by the manufacturer, Federal Adhesives Corp., 210 Wythe Ave., Brooklyn 11, for



A.



B.

Like magic! Special automatic machines draw Kodapak Sheet sleeve (A) to fit molded paper package (B); sleeve is formed directly on package (C) to assure crystal-clear protection (D).

People who sell Milady go for **Kodapak Sheet**

"Kodapak" is a trade-mark

... **AND GOOD REASON!** Brilliant, crystal-clear Kodapak Sheet protects so many of the things she buys from dust, dirt and moisture; adds life and sparkle to gay packages; keeps them looking fresh.

Expensive? No! Kodapak Sheet is tough, durable, free from bubbles and surface defects—looks its best, sheet after sheet. Uniform, physically and chemically, it is economically fabricated on high-production equipment.

Like to glamorize your product—make it move faster? Ask our representative about Kodapak Sheet or write:

Cellulose Products Division, Eastman Kodak Company, Rochester 4, N.Y.

Sales offices: New York, Chicago, Atlanta. Sales representatives: Cleveland, Philadelphia, Providence. Distributors: San Francisco, Los Angeles, Portland, Seattle (Wilson & Geo. Meyer & Co.); Toronto, Montreal (Paper Sales, Ltd.).

Package by W. C. Ritchie & Company, Chicago, Illinois

**MAKES
GOOD MERCHANDISE
SELL BETTER!**

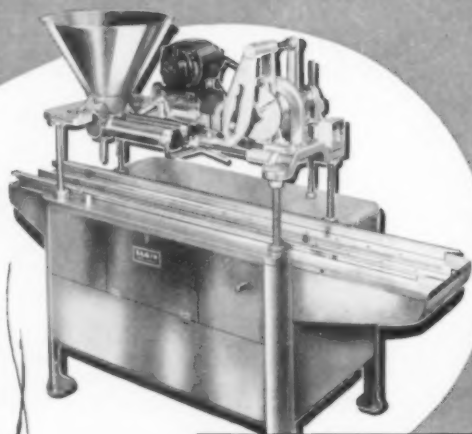


D.

Elgin
EARNs ITS WAY

TWIN 2 VALVE FILLER

doubles filling speed



**UNPARALLELED
ACCURACY
of FILL**

**The Ideal Filler for
GLASS
PLASTIC
TIN containers**

**Accurate Ingredient
Fill For
Aerosol Packaging**

**ELGIN
MANUFACTURING
COMPANY**

**200 BROOK STREET
ELGIN, ILLINOIS**

Equipment and materials

use on various label stocks, in the manufacture of heat-sealable paper bags and containers and for other purposes where high-speed application is required. The adhesive is supplied as an aqueous liquid and can be applied by conventional mechanical equipment, according to the manufacturer. The adhesive is said to give good heat-seal bonds to paper, boxboard, wood, aluminum foil, glass and many plastics.

AN AUTOMATIC VACUUM-FORMING MACHINE

announced by The Whitlock Co., 3655 N. Southport Ave., Chicago 13, is reported to offer innovations in speed and efficiency, in that one basic machine plus accessories greatly widens the



scope of operation normally possible. Two operating stations adjacent to each other with a traveling oven permit one-man operation with top efficiency for materials whose heating and forming cycle is sufficiently slow that during the heating cycle of one sheet the operator may be removing and reloading the opposite station. On faster

cycling, two operators may work side by side. Separate timing controls permit two different forming operations to proceed on each station. The base tables will form up to 31 by 41 in. and extension tables and oven units are available to permit handling sheets up to 60 by 96 in. in size. For deep-draw parts requiring plug and ring forming, special presses with air cylinders may be obtained to mount at either end of the machine and the sheets are heated by extension ovens.

NEW TAPES IN A LARGE COLOR RANGE

are now available from the Permacel Tape Corp., New Brunswick, N. J. These new Texcel 33 Plastic Tapes come in 10 different colors—gray, blue, yellow, brown, green, white, red, black, pink and turquoise—selected and designed by Howard Ketchum, a leading color authority. The 10 colors were designed so that any two selected blend with each other. The new plastic tapes are reported to be waterproof, washable, stain and fade resistant and flame resistant. They are available in rolls measuring ¾ by 108 in. and 1½ by 108 in.

Also announced by Permacel is a new long-length cellophane pressure-sensitive tape which the company guarantees against breakage. This new Texcel 44 tape is reported to be resistant to extremes of temperature and humidity, solving the problem of breakage in winter and telescoping in summer. The new "climate-conditioned" tape is available in 2,592-in. and 1,296-in. rolls.

AN ALL-PURPOSE, LOW-COST AUTOMATIC SEAMER

introduced by the Angelus Sanitary Can Machine Co., 4900 Pacific Blvd., Los Angeles 58, is designed to fill the needs of the small canner and particularly those having a large number of change-overs or short runs. This new fully automatic Model 10P seamer has a speed range of from 30 to 85 cans per minute and handles can-diameter sizes of from 2¼ to 4¼ in. It is suitable for canning solids or liquids. In addition to its low original cost, the machine is reported to be extremely flexible. Only a small number of change parts is required for can-size change, which helps further to minimize original investment in parts, as well as to speed up and reduce cost of change-over time.

Tri-Sure[®] protection for shipments to 45 countries



Hemisphere International Corporation of New Orleans knows that protection in transit is vital for Hemisphere motor oils, lubricants and greases. They ship to all parts of the world—under all kinds of conditions.

The solution is Tri-Sure[®] Closures on every drum. Tri-Sure Closures make sure that the high quality that is sealed in Hemisphere drums at the refinery is delivered to customers thousands of miles away—free of impurities and contamination, safe from leakage and tampering.

The Tri-Sure Tab Seal with private design, shown above, is the newest drum closure seal and is rapidly becoming standard with shippers the world over.

Give your products the protection of the Tri-Sure Flange, Plug and Seal—proven dependable in shipments all over the world. When you order drums, always specify "Tri-Sure Closures."

Tri-Sure Closures are available in

CANADA: Tri-Sure Products Limited, St. Catharines, Ontario, Canada

CONTINENTAL EUROPE: B. Van Leer N. V., Stadhouderskade 6, Amsterdam, Holland

THE UNITED KINGDOM: Van Leer Industries, Ltd., Seymour House, 17 Waterloo Place, Pall Mall S. W. 1, London, England

BRAZIL: Tri-Sure S/A Indústria e Comércio, Sao Paulo, Brazil

AMERICAN FLANGE & MANUFACTURING CO. INC., 30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

Always specify

Tri-Sure
Reg. U. S. Pat. Off.
CLOSURES

*The "Tri-Sure" Trademark is a mark of reliability backed by over 30 years serving industry. It tells your customers that genuine Tri-Sure Flanges (inserted with genuine Tri-Sure dies), Plugs and Seals have been used.

Plants and people

Olin Mathieson Chemical Corp., New York, has named **Gordon Grand** vice president for administration; **W. J. Heckman**, vice president for purchasing and transportation; **R. E. McCormick**, vice president and secretary; **D. G. Ward**, assistant vice president for purchasing and transportation.

Robert Cole has been promoted to director of advertising for the corporation from the post of advertising and sales promotion manager of Olin Industries, Inc. In addition **Henry H. Hunter** has been appointed publicity manager; **William F. Leonard**, assistant director of public relations, and **C. D. Stamp**, security officer.

Dr. Richard Henderson has joined the staff of the development section, film research and development, Olin Film Div., as senior food technologist.

Cellophane manufactured by the **Sylvania Division, American Viscose Corp.**, is now being marketed under the name, **Avisco**. The change is part of a new policy by which all corporation products—rayon, acetate, elastic yarns, vinyl resin fibres, textile chemicals—will be combined under a single widely advertised label.

Industrial Packaging Co., Inc., manufacturers of paperboard and plastic containers, Brooklyn, have moved to expanded facilities in Ridgefield Park, N. J.

Alford Cartons, Ridgefield, N. J., has formed a new packaging research and application department, headed by **William F. Wanner**.

C. V. Blatter, formerly with National Rubber Machinery Co., has joined the sales engineering staff of **Frank W. Egan & Co.**, Somerville, N. J. **A. J. Russell**, who has been with the company since 1951, is now sales engineer for their paper converting equipment.

Arkell & Smiths, Canajoharie, N. Y., manufacturer of multiwall and specialty bags, has promoted **Lloyd H. Finke** to Chicago district sales manager. **Phil Rarden** is the new Louisville, Ky., district representative and **R. S. Seymour** is the new Philadelphia district representative.

John Fulton Ryan has been appointed manager of the St. Louis multiwall paper bag division of **Fulton Bag & Cotton Mills**, Atlanta, Ga. **August W. Moenkhaus** has been named manager of textile and multiwall bag sales in the St. Louis area.

Ace Carton Corp., Chicago, has purchased controlling interest in **Master Cartons, Inc.**, San Gabriel, Calif. The concern will be renamed **Ace Carton Corp.** of Calif., with **George T. Franck** as president and **Sheldon O. Crowen** vice president in charge of sales. Both men held the same positions with Master Cartons. The new company will build a 50,000-sq.-ft. manufacturing plant at Puente, Calif.



R. J. Butler

Robert J. Butler, formerly vice president and general manager of **C. O. Monk, Inc.**, Baltimore, Md., has joined **Bensing Bros. & Deeney**, Philadelphia, Pa., as a member of the letterpress-lithographic ink division sales-service organization.

The Lewis Container Corp. is making a 50% increase in the size of its Colby, Wis., plant with the construction this summer of additional manufacturing, shipping and roll-stock storage buildings. The company's sales offices are being moved to Wausau, Wis., this month as part of the expansion program.

The suit of the **Visking Corp.**, Chicago, against **Durethene Corp.** for patent infringement in the production of polyethylene film has been settled. The settlement includes a non-exclusive license to Durethene under the Visking patents relating to the production of thermoplastic film, including polyethylene.

Ex-Cell-O Corp., Detroit, Mich., manufacturer of dairy packaging equipment, has been appointed distributor for Conoco brand dairy waxes by **Continental Oil Co.**, Houston, Tex.



R. Colomy

Robert Colomy was recently appointed general sales manager of the **E. G. Staude Mfg. Co., Inc.**, St. Paul, Minn. The firm's Eastern sales office, headed by **Theodore Von Theine**, is now located in new quarters at 35 Beechwood Ave., Mt. Vernon, N. Y.

General Paper Products Co., New York, and its affiliate, **Hudson Paper Co.**, have

combined under a single name, **Hudson General Paper Corp.** New main office and warehouse are at 88-94 W. Sheffield Ave., Englewood, N. J.

Gerald A. Ward has been appointed general manager of distribution for **Bakelite Co.**, a division of Union Carbide & Carbon Corp. He will be responsible for packaging and packing Bakelite plastics.

Louis Fink has been elected president of **Reading Corrugated Container Corp.**

Dominick Toscano has joined the production staff of **Polymer Industries Inc.**, at their Springdale, Conn., plant.

A new container plant has been opened at Atlanta, Ga., by **Robert Gair Co., Inc.**, New York. The plant comprises approximately 50,000 sq. ft. of manufacturing and office space. The Port Wentworth, Ga., plant of **Southern Paperboard Corp.**, Gair subsidiary, will supply most of the new plant's paperboard requirements. Acting manager is **Jack L. Wyche**.

Harry W. Cyphers, Jr., has joined the **Borden Co.'s** Chemical Division as sales manager of its Durite department in Philadelphia, Pa. He previously was with **American Cyanamid Co.**



J. T. Lea, Jr.

Riegel Paper Corp. has opened a branch office at 66 11 St., N.E., Atlanta, Ga., to serve the Southeastern and Southern states. **J. T. Lea, Jr.**, who has represented the company in the South for 15 years, will be manager.

Gaylord Container Corp., St. Louis, Mo., has named **Robert H. McNaghten** assistant general sales manager of its East Central division.

Thilmany Pulp & Paper Co., Kaukauna, Wis., recently elected **Joseph T. Thomas**, central sales division manager, and **Charles L. Dostal**, assistant to the executive vice president, to its board of directors. **Verne G. Haag**, formerly Midwest sales division representative, has been named general sales manager.

Inland Container Corp., Indianapolis, Ind., has won the second annual Award of Merit of the **Research Institute of America** for attention to "the human element in business." The award-winning entry was the book, "You and Your Job at Inland," presented to new employees.

Construction is under way on Inland's new million-dollar converting plant for



"You mean live fish?"

Exactly: Live fish. In water.
In a corrugated box.

A customer of ours uses this
unique bag-in-a-box-in-a-box to ship
live tropical fish all over the world.
Says it's the most damage-proof
and economical package he's used
in 32 years as an aquarist.

Just goes to show you:
Nothing's impossible for H&D
Package Engineers. Why not let 'em
tackle your packaging problem?



HINDE & DAUCH

AUTHORITY ON PACKAGING • SANDUSKY, OHIO
13 FACTORIES • 40 SALES OFFICES

Repeat Orders

Are the Best Proof of

CaPeM's

EFFICIENT PERFORMANCE



* These eight packaging lines in the Wildroot Plant in Buffalo, N. Y. have a combined capacity of approximately 1000 bottles per minute. The Wildroot Company, manufacturers of famous Wildroot Shampoo and allied products, have long been users of CaPeM screw cappers. The efficient performance turned in by earlier CaPeM machines was the determining factor in their selection when Wildroot recently equipped a new plant.

CaPeM Screw Cappers handle all types of metal and plastic caps and are fully automatic. They operate on jars, cans, bottles and jugs ranging in size from 1 oz. to gallons. Speeds range from 40 to 300 containers per minute.

For complete information on CaPeM Screw Cappers, or other packaging equipment, write Sales Manager, Consolidated Packaging Machinery Corp., Buffalo 13, N. Y.

CaPeM SCREW CAPPERS

CONSOLIDATED PACKAGING MACHINERY CORP.

1400 West Ave., Buffalo 13, N. Y.

Plants and people

corrugated boxes at Krannert, Ga., which is scheduled for completion in September.

Robert F. Elder has been elected executive vice president of Plax Corp., Hartford, Conn., and Robert A. Glaenzer, formerly general sales manager, has been made vice president in charge of sales.



R. F. Elder

R. A. Glaenzer

C. Paul Fortner, formerly director of research, has become vice president in charge of research and development and Richard S. Light has been named general factory manager.

Continental Can Co. has purchased patents and production facilities of Vaporized Metal Coatings, Inc., Roosevelt, N. J. Dr. Paul Alexander, inventor of the vaporized metal coating process developed by the company, will join the Continental organization and Mark Riwkin, president of Vaporized Metal, will be available on a consultation basis.



C. J. Wheeler

Consolidated Paper Co., Monroe, Mich., has appointed Charles J. Wheeler folding carton representative in Western Michigan, with headquarters in the firm's newly opened office in Lansing. Mr. Wheeler, formerly with Sutherland Paper Co., has had 14 years of packaging experience.

The Butterfield-Barry Co., Inc., distributor and converter of paperboard, has moved from New York to a new, larger plant at Huyler St., Teterboro, N. J.

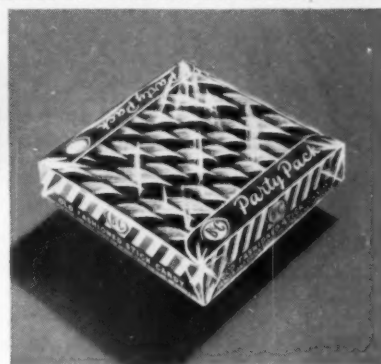
The Howard Flint Ink Co., Detroit, Mich., recently opened its first factory in the East at Paterson, N. J. Technical staff at the plant is headed by Frederick Dankert. John F. Devine, vice president, will direct the over-all operation.

Atlanta Envelope Co., Atlanta, Ga., has acquired the Schutt Envelope Mfg. Co., Miami, Fla., which will be managed by John C. Schutt. Atlanta Envelope also is expanding its Atlanta plant 10,000 sq. ft. to handle sheeting of paper.

Chicago sales offices of the various divisions of the St. Regis Paper Co., New



NEW PACKAGE SELLS SUPERMARKETS!



Olin Cellophane Tra-Pak Helps BARGER & CRAIN Move "Penny Goods" Into a Multi-Million Dollar Market

To win their first supermarket distribution volume and profits, the Barger & Crain Candy Co. of Paducah, Kentucky, switched their candy sticks to a tray overwrap package. With the aid of sample trays from an Olin Cellophane Tra-Pak, they worked out packaging construction and features that were outstandingly successful in meeting the demands of today's self-service, fast-turnover supermarket shopping.

A regular place in supermarket candy sections throughout 20 midwestern and southern states was the quick result! In less than a year's time after it was first brought to jobbers' attention, the ease of stacking, durability, full visibility and high brand identification of the new Olin Cellophane overwrapped tray package had transformed a former penny seller into a favorite supermarket item.

If you, too, are seeking to broaden distribution and step up unit sales, look into the possibilities of a tray package overwrapped with Olin Cellophane. The Olin Film Division files are filled with records of bakers and candy makers who have achieved new sales successes as amazing as that of Barger & Crain — and who slashed their packaging costs doing it.

Write today to the Olin Film Division or to your converter of Olin Cellophane for a free Olin Cellophane Tra-Pak. This handy kit will help you work out the tray construction especially suited to the needs of your product.



FREE OLIN CELLOPHANE TRA-PAK

Yours on request — 8 sample trays to help you develop quickly the type of tray design that best fits today's self-service packaging requirements for food, candy, drug and other consumer products.



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JULY 1955

149

The secret of better flexographic printing



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Made by craftsmen of the largest, best-equipped rubber plate-making organization—and quality-controlled by technical specialists—MOSSTYPES are your best bet for consistently good impressions, trouble-free performance on the press, long life. You can rely on them for uniform gauge, dimensional accuracy, maximum sharpness, close color register, freedom from blisters and other flaws. *Premadeready* by our special process, MOSSTYPES are delivered ready to print when you mount them.



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The following new models have been introduced within the last several months. All are of the very latest design, incorporating exclusive features which will improve operation of your present equipment or methods.

You should investigate the advantages of these new models:

- MODEL 704: AIR OPERATED UNWIND WITH AUTOMATIC EDGE GUIDING AND CONSTANT TENSION
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- MODEL 635: SHEAR CUT SLITTER
- MODEL 601: HEAVY DUTY CENTER REWINDER WITH AIR-OPERATED SLIP CLUTCH FOR REMOTE CONTROL OF REWIND TENSION
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MANUFACTURERS OF: SLITTERS, WINDERS, CONSTANT TENSION UNWINDERS, KNIVES, LEVERS, SLEEVES

Plants and people

York, have been consolidated at one location at 18 S. Michigan Ave., Chicago 3. Gene C. Brown, sales engineer for the Birmingham office of the multiwall packaging division, has been transferred to Dallas. John Hines is now in Houston as field engineer for the south Texas area.

Dr. John C. Bird of Lederle Laboratories Division, American Cyanamid Co., has announced his retirement from active business. He has also resigned from the Technical Operations Committee and the Drug and Pharmaceutical Committee of the Packaging Institute.

J. S. Bruskin has been appointed to the newly created post of manager of the



J. S.
Bruskin

E. J.
Dunlavy

Films and Flooring Division, Good-year Tire & Rubber Co., Akron, Ohio. E. J. Dunlavy succeeds Mr. Bruskin as manager of the vinyl film

sales department. E. H. Dours, manager of the packaging films department, and H. M. Evans, manager of flooring sales, will report to Mr. Bruskin.

Brown & Bigelow, St. Paul, Minn., has announced the following executive changes in its subsidiaries: Dean C. Mathews has been elected vice president and director of Century Envelope Co. and of Quality Park Envelope Co. L. H. Wasley, president of the two envelope companies, has been named director of Quality Park Box Co.

New officers recently elected by Utility Plastic Bag Co., Chicago, are: Lew Goodman, president; Alfred K. Doi, executive vice president; Lloyd Lundeen, vice president; Francis A. Gerbac, secretary-treasurer; Don Schaefer, sales manager.

Professor Paul D. Converse has resigned as head of the department of marketing at the University of Illinois, Urbana, though he will continue as professor of marketing. He will be succeeded by Professor Harvey W. Huegy.

Union Bag & Paper Corp. has appointed E. L. Corrent as multiwall bag sales representative for the Rocky Mountain States, with headquarters in Denver.

The Flex-Vac Division of Standard Packaging Corp., Jersey City, N. J., has

record sales for dairy counter foods in eye-catching STYRON PLASTIC CONTAINERS



In standard shapes and sizes for molded jello fruit salad.



In the new half-gallon size for ice cream and sherbet.



For premium-type promotions like the new Record Pak.



In crystal-clear, individual showcases for any product.

Add new protection and flavor appeal—pack your product
in containers made of crystal-clear, rigid Styron or colorful, vacuum-formed Styron

These plastic packages have provided increased and sustained sales in major food stores where visual selling of dairy counter foods is a must.

Perishable, dairy counter foods stay fresh as the day you packed them in protective Styron® containers. Lids are tight-fitting. Styron won't absorb food moisture or odors . . . retains its attractive appearance . . . and it can be

molded to meet your packaging specifications in kitchen-fresh color or crystal clear to put your product on display.

Whatever your food product may be, get all the facts on sparkling Styron packaging and your product will get a head start on sales! Write for packaging assistance to Plastics Merchandising Packaging Section, PL 478DD, THE DOW CHEMICAL COMPANY, Midland, Michigan.

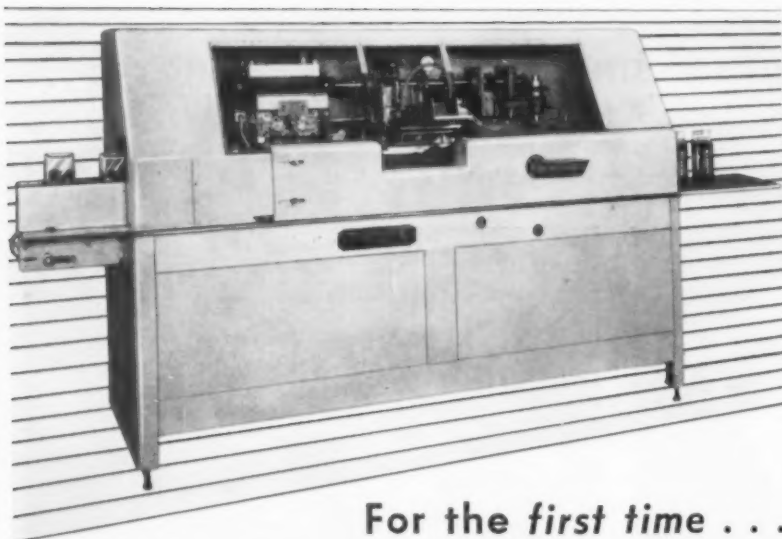
THE DOW CHEMICAL COMPANY, Plastics Sales Department, PL 478DD, Midland, Michigan

Please send me your new "A Catalog of Packages Made of Styron".

Name _____ Title _____ Company _____
Address _____ City _____ Zone _____ State _____

you can depend on DOW PLASTICS

DOW



For the first time . . . a machine to close, seal and label cellophane bags *automatically*

The new Peters Model L-2 Bag Sealing & Header Applying machine meets a long-time need for cellophane bag packagers. It receives filled bags from packing conveyor, automatically times them into the machine, tucks the gusset, applies header or label, and heat seals the bag and label—all at speeds of 65 or more bags per minute. Plain or thermo-plastic coated labels are handled; code or date applied to label if desired.

The model L-2 replaces expensive hand operation. It also assures uniform closure and accurate application of labels. It handles a wide range of products, and is readily adjustable to handle various size gusset type bags.

New Peters Cellophane Sheeter also Aids Cellophane Packagers

Peters new Model UD Cellophane Sheeting & Stacking machine automatically cuts cellophane and similar material to a wide variety of sizes. Then it stacks sheets for easy handling. Serves film and paper converters and wholesalers, as well as packagers of self-service meats, vegetables, fruit, etc.

For complete information and specifications on Peters packaging machines, write, wire or call



Peters MACHINERY COMPANY

4712 Ravenswood Avenue

Chicago 40, Illinois

Telephone: LOngbeach 1-9000

Plants and people

formed a technical service department as an adjunct to its sales department. A. W. Peters is in charge.

The appointment of Robert C. Ericson as staff assistant to the technical director,

Cryovac division, has been announced by Dewey & Almy Chemical Co., Cambridge, Mass., division of W. R. Grace & Co.



W. W.
Pflug

William W. Pflug has been elected vice president and appointed sales manager of Peerless Tube Co., Bloomfield, N. J. Mr. Pflug recently held the same positions with the Sun Tube Corp.

tions with the Sun Tube Corp.

Risdon Mfg. Co., Naugatuck, Conn., has appointed C. F. Meffley as sales representative for its aerosol valve and metal goods divisions.

Exclusive license has been granted Aerosol Industries Corp., Osaka, Japan, for the manufacture and sale of Risdon aerosol dispensing valves in Japan.

John F. Fraser, Jr., has joined Rheem Mfg. Co. as sales promotion manager for the Chicago region.

William T. Suggs has been named manager of the newly established can division of White Metal Mfg. Co., Hoboken, N. J.

Vulcan Stamping & Mfg. Co., Bellwood, Ill., manufacturers of steel shipping drums and pails, are constructing a 460-ft.-long addition to their plant that will allow indoor loading of railroad cars and motor trucks on a 24-hr. basis.

George Wash has been appointed director of the newly formed plastic sales division of Phillips Chemical Co., Bartlesville, Okla., to take charge of all sales and services connected with the company's new Marlex polyethylene.

George A. Fitzgerald, industrial and automotive sales manager of Permacel Tape Corp., New Brunswick, N. J., has been named a vice president.

Western Waxed Paper Division, Crown Zellerbach Corp., has made the following personnel changes: William Murphy, district sales representative, Seattle, Wash., has been granted a leave of absence and John Davie, formerly district sales representative, Salt Lake City, Utah, takes his place. Roddy Rauch, sales representative, Portland, Ore., succeeds Mr. Davie. Stan Aune takes over Mr. Rauch's

To users
of plain
aluminum foil
our trade mark



means

- QUALITY
- SERVICE
- LEADERSHIP

⁺ALUMINUM FOILS, INC.



Plants and people

territory in western Oregon and Robert French has been assigned to cover the eastern and northern Oregon territory vacated by Mr. Aune.

Joseph Tobin, district sales representative in Denver, Colo., has been named assistant manager, sales promotion and advertising, San Leandro, Calif. Ken May, district sales representative, Spokane, Wash., succeeds him and Norman McGill, special sales representative in Portland, replaces the latter in Spokane.

J. L. Clark Mfg. Co., Rockford, Ill., makers of lithographed metal containers, won a first prize in the recent Fifth



Lithographic Awards Competition and Exhibit for designing and producing the eight-color gift tray illustrated above.

Roger L. Putnam, chairman of the board of Package Machinery Co., East Longmeadow, Mass., has received the William Pynchon Medal, highest civic award of the City of Springfield, Mass.

Sheffield Tube Corp., New London, Conn., recently opened this new office



and warehouse to serve the Chicago area, located at 2850 Congress Expressway, Broadview, Ill.

Robert A. Brown has been appointed president of Nashua Corp., Nashua, N. H., to succeed Vasco E. Numez, who has retired.

The board of directors of the Raymond Bag Co., Middletown, Ohio, has elected W. F. Lawrence, formerly company president, chairman of the board. Clarence L. Mers, vice president and general manager since 1952, has been appointed president and James H. Lawrence has

p p p partitions for protective packaging



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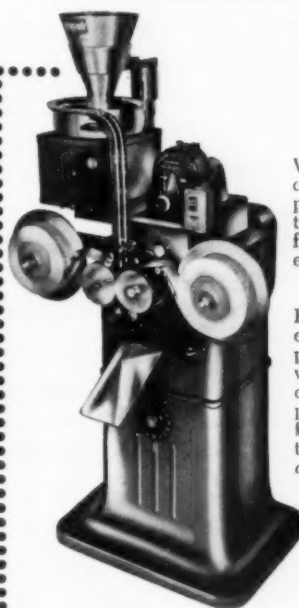
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Packages Tablets, Capsules and Coated Tablets efficiently and economically. Double Feed Tracks permit speeds in excess of 300 units per minute, within dimensional limits of product. This machine has proved itself in some of the largest pharmaceutical companies, where it is preferred for its speed, simplicity and superior construction. Other Unit Packagers available for almost any small item.

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Manufacturers of Packaging Machinery for over 20 yrs.
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boosts your output of scroll cut strip

The larger, wider bed of this shear takes the bigger 36" x 36" sheets (allows more strips per sheet). What's more, its higher speed lets you feed more sheets; helps you step up production, step down costs. And its rugged design gives you precise, high-speed blanking year after year.

These exclusive design features tell you why: New *magnetic* feed bars assure accurate feeding (or mechanical bars for non-ferrous sheets). New intake trimming slitter makes hairline cuts. Counterbalanced slide has unusually long guides. Heavy cast Meehanite frame is one-piece construction for the extra rigidity that makes your dies last longer.

Identified as No. 1100, this new shear is *one more example* of what you can expect from Bliss' new Hastings (Mich.) can plant. It's *one more reason* to keep your eyes on Bliss can machinery. Meanwhile, why not write for more information about this shear. We'll be glad to send it by return mail. Write to:

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General Sales Office: 50 Church Street, New York 7, N. Y.

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SLITTERS



BODYMAKERS



FLANGERS



SEAMERS



TESTERS



STRIP FEED PRESSES

Plants and people

been moved up from secretary and treasurer to vice president and secretary. **W. G. Shaw**, formerly comptroller, has been named treasurer.

The Hinde & Dauch Paper Co., Sandusky, Ohio, has appointed **Hyland F. Kimball, Jr.**, Philadelphia district sales manager, in charge of sales for products manufactured at the company's Gloucester City, N. J., plant.

Franklin K. Zimmerman has resigned as president of **Lynch Corp.**, Anderson, Ind., manufacturers of glass forming and packaging machinery. Pending the election of a successor, the corporation will be administered by **Thomas C. Werbe, Jr.**, executive vice president. Mr. Zimmerman will continue as a director.

H. S. Crocker Co., Inc., San Bruno, Calif., and **Rossotti Lithograph Corp.**, North Bergen, N. J., have entered into a manufacturing arrangement for exchanging their complete label and folding-box manufacturing facilities. Crocker has purchased Rossotti's San Francisco plant and will manufacture all lithograph folding boxes for both companies for West Coast distribution, while Rossotti will handle Eastern distribution.

M. Crawford Pollock, formerly sales and advertising vice president for **C. A. Swanson & Sons**, has been appointed marketing manager—frozen foods for the **Campbell Soup Co.**, which recently acquired Swanson. Mr. Pollock previously had been with **E. I. du Pont**.

H. B. Fuller Co., St. Paul, Minn., has named **Larry Langfeld** as its representative for the state of Washington and northwestern Idaho and **Jack B. Jones** for Cleveland and northern Ohio.

A. Lincoln Key has been appointed general sales manager for the **Glenshaw Glass Co., Inc.**, Glenshaw, Pa., manufacturers of glass containers.

Clarence V. Ore has been made general sales manager for the **Pacific Coast Foil Co.**, San Francisco. He succeeds **George Holt**, who is now a vice president.

Alfred F. Zornow has been made special representative for **Continental Packaging & Processing, Inc.**, Chicago, specialists in contract and military packaging.

Lewis C. Wallace has been appointed manager of process development for the **Crown Cork & Seal Co., Inc.**, Baltimore.

Wabash Fibre Box Co., Terre Haute, Ind., will construct a new corrugated



Faster, easier way to code and date labels!

You can now make a *big* saving in the cost of coding, dating or otherwise imprinting your product labels and wrappers! All you need is a Pitney-Bowes Tickometer.

This remarkable, electrically operated machine also counts the labels, as it imprints them . . . up to 1,000 *per minute*. Gives whole or partial counts. Saves you losses on unused labels that have pre-printed codes or identifications—handles most any kind of card, form, or paper item. And it's so accurate, banks use it to count currency!

Manufacturers of food and drug products use it to prevent imitations, to identify origins, inspectors, factory lots—quickly, unobtrusively, cheaply.

You can either buy or rent a Tickometer. Either way, it saves you valuable time and money. And it's backed by Pitney-Bowes' service from 259 service points, coast to coast. Ask the nearest PB office for a demonstration. Or, send the coupon for a free illustrated booklet and folder of case studies.



The Tickometer offers food and drug manufacturers and others an easier, less expensive, unobtrusive way of dating or coding their product labels. Send coupon for free folder of case studies.

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Counting & Imprinting Machines

*Made by the originators of the postage meter . . .
offices in 94 cities in U. S. and Canada.*

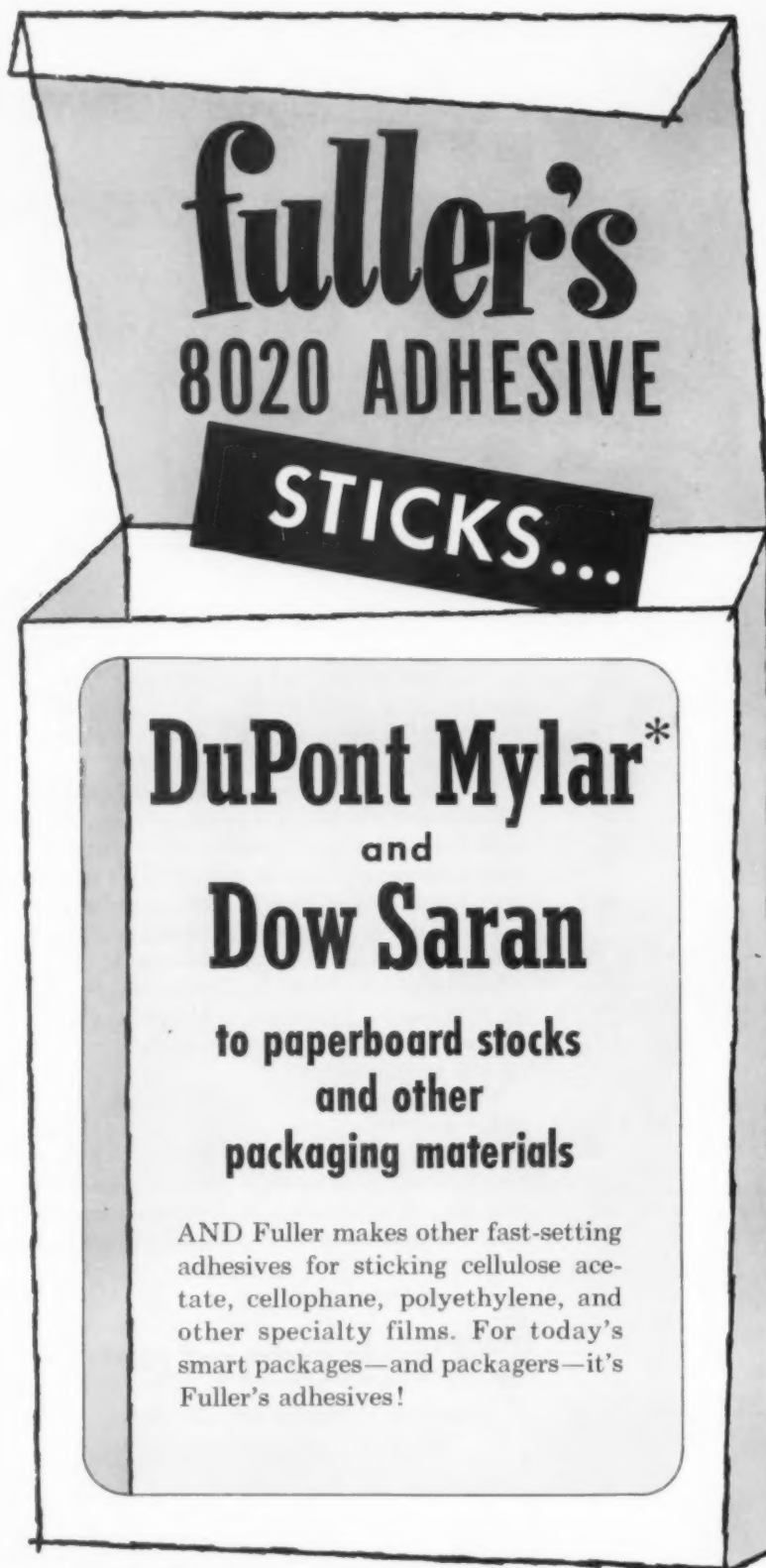


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- ☐ Send Tickometer booklet
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*Mylar is DuPont's registered trade-mark for its polyester film.

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General Offices: 181 W. Kellogg Blvd., St. Paul 2, Minn.

Factories in St. Paul; Chicago; Buffalo; Linden, N.J.; Cincinnati; Kansas City; Atlanta; Dallas; San Francisco; Portland, Oregon.

Plants and people

box manufacturing plant in Chicago. Completion of the 125,000-sq.-ft. plant is scheduled for November.



A. B.
Albree

Anson B. Albree has been named sales manager of Aluminum Foils, Inc., Jackson, Tenn., and Edgar Zimont has joined the company's Chicago sales office.

Arthur Colton Co., Detroit, has announced plans for a \$500,000 plant - expansion program, to be completed by the fall of this year. It is designed to double the company's floor space for the building of pharmaceutical, chemical and food industry machinery.

Imco Container Corp., Kansas City, Mo., has appointed the E. H. Southwell Co. of Los Angeles as its West Coast representative.

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., has appointed William F. Kelly as New York sales correspondent for the corporation's Kinetic Division.



A. W.
Soell

A. W. Soell, director of purchases of the Gaylord Container Corp., St. Louis, has been elected president of the National Assn. of Purchasing Agents.

H. B. Fuller Co., St. Paul, Minn., has announced the acquisition of the Harry Kolb casein business. San Francisco, by its West Coast branch, H. B. Fuller Co. of California.

The Cottrell Co., Cleveland, has consolidated its New York sales office with that of Harris-Seybold Co., its parent company, at 380 Second Ave., New York 10.

Robert N. Wallis, treasurer, Dennison Mfg. Co., Framingham, Mass., has been elected president of the Controllers Institute of America.

Glass Containers, Inc., San Francisco, has appointed Joe R. Riordan as sales representative.

Johnston Film Mfg. Co., St. Louis, has announced the election of a number of new officers. John J. Geraghty is now chairman of the board; Howard J. Geraghty, president and director; Paul A. Martin, vice president, treasurer and

MODERN PACKAGING

ECONOMIC MACHINERY COMPANY

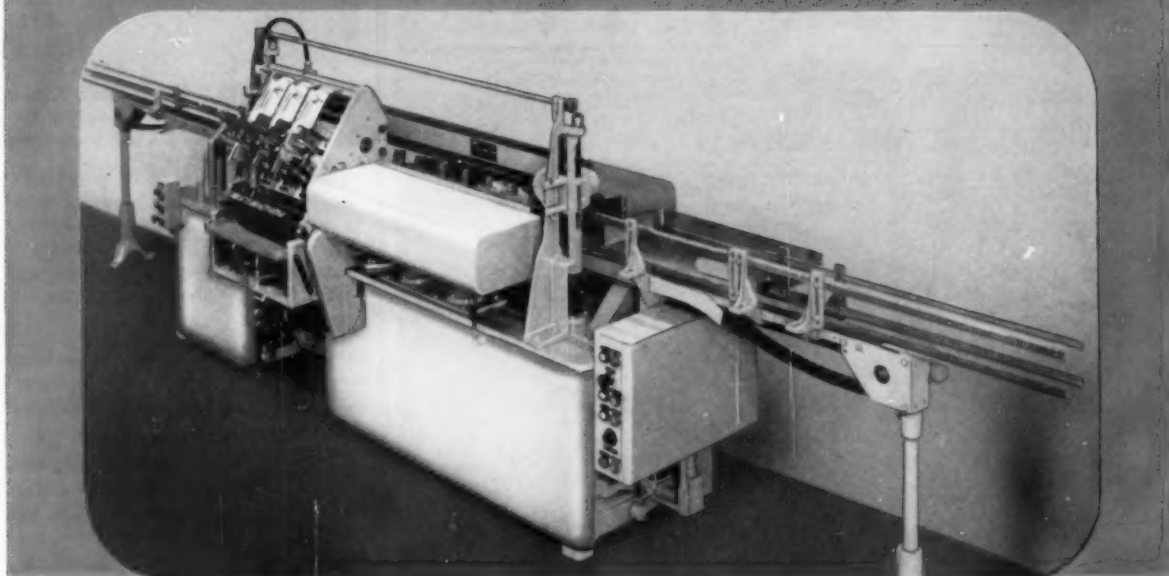


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The **WORLD** *Super C.M.*

HIGH SPEED, AUTOMATIC LABELER



— a new and revolutionary advance in precision application of single or multiple labels (front, back, shoulder, neck, wrap around neck labels or foil) at speeds up to 300 glass containers per minute

The new WORLD SUPER C. M. Labeler incorporates the tested and proved principles of label application engineered by the Company that has built more automatic labelers than any other organization in the world

plus all these features and advantages:

- Continuous Motion
- Straight Line Operation
- Air-O-Matic Control
- Super Flexibility
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- Overall Adhesive Application
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- Labor Economy
- Precise, Single or Multiple Label Application to Any Size or Shape of Glass Container up to Gallon Capacity



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BULLETIN CM-234

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"Good enough" has no place in the thinking of the engineering and manufacturing of FORMVAC equipment. Rugged construction, foolproof operation and increased productivity dominate its designing.

FORMVAC makes the hardest jobs easy: fully synchronized push-button operation, the unique "off-and-on" radiant heater system cuts costs 30% to 70%, automatic sheet clamping for the ultimate in forming perfection. Learn all the facts about FORMVAC and you'll know why it is America's most advanced, most rugged vacuum forming equipment.

Formvac — The One Complete Coordinated Production System! Plastic Sheet Extrusion Equipment • Plastic Sheet Extrusion Dies • Plastic Sheet Take-off Equipment • Plastic Sheet Laminating Equipment • Plastic Sheet Cutting Equipment • Vacuum Drape and Deep Drawing Equipment for Plastic Sheet • Plastic Sheet Testing Equipment

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Formvac Combines the Finest of Original Swiss Precision Designing with Foremost American Manufacturing and Plastics Engineering Techniques and Service

Plants and people

director; W. Bingham Cox, vice president; Richard E. Conley, secretary, and J. J. Geraghty, Jr., assistant treasurer.



W. J. A.
Connor

Walter J. A. Connor has been elected executive vice president and a director of American Plastics Corp., New York, a subsidiary of Heyden Chemical Corp.

Empire Box Corp. of Garfield, N. J., and its paperboard mills at Stroudsburg, Pa., have changed their corporate name to Coates Board & Carton Co., Inc. Benjamin Coates purchased Empire in July, 1954.

Henry R. Merrill has been appointed general sales manager of the Behr-Manning Corp., Troy, N. Y., a division of Norton Co., Worcester, Mass., manufacturers of coated abrasives and pressure-sensitive tapes.

Durethane Corp., Chicago, manufacturers of polyethylene film, recently increased production capacity of its Chicago and Los Angeles plants by 25%.

Dow Chemical International, Ltd., Midland, Mich., has opened a new Far Eastern sales office in Tokyo, Japan. H. Lee Clack will be manager and Howard C. Visger, assistant manager.

Rentar Packaging Co., Inc., Brooklyn, has appointed T. G. Kenyon, Jr., assistant to the vice president in charge of its export packaging division.

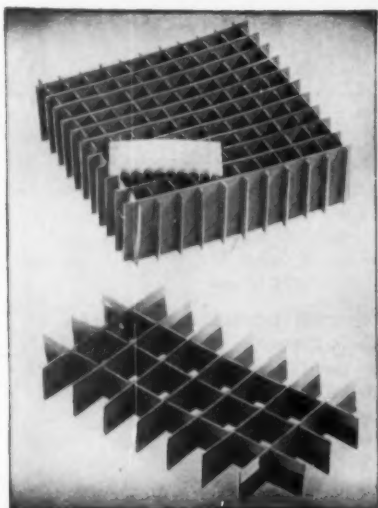
James P. O'Brien has been promoted as New England industrial sales representative for Ekco Foil Container Corp., Chicago. His headquarters are in Boston, Mass.

Jones & Laughlin Steel Corp., Pittsburgh, has appointed David O. Merrill manager of sales of its Container Division, with headquarters in New York. He will supervise the distribution of galvanized ware, steel shipping pails and steel drums.

Dr. William H. Schuette has been appointed general manager of the Midland Division of Dow Chemical Co.

Container Laboratories, Inc., Chicago, has opened a testing laboratory at 435 Stanford Ave., Los Angeles. It is under the supervision of Henry D. Breen.

Gene Rose, Inc., has begun construction of an additional 14,000 sq. ft. of plant



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Solve YOUR
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SAFELY—SECURELY!

Made to Your
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EVergreen 8-2512-3-4

(Formerly at 169-173 Franklin Ave.)



Plants and people

space in its Chicago plant. The company specializes in private aerosol packaging.

Atlas Plywood Corp., Boston, Mass., has elected **Robert A. Muller** president to succeed the late **Elmore I. MacPhie**. **Charles V. Molesworth**, president of Plywood, Inc., a subsidiary, has been named a director of the parent company.

Ray E. Wagner has been added to the Ohio sales staff of **Milprint, Inc.**, Milwaukee, Wis.

Crystal Tube Corp., Chicago, converters and printers of transparent packaging materials, announce the association with their sales department of **Vincent J. Sheridan, Sr.**, and **Vincent J. Sheridan, Jr.** They will represent **Crystal Tube** in the sale of converted cellophane, polyethylene, Pliofilm and saran.

E. C. Berg, development engineer, and **Milton Connerty**, sales service manager, were honored recently upon completion of 25 years of service with the **Ace Carton Co.**, Chicago.

Rolph-Clark-Stone, Ltd., has purchased **Automatic Paper Box Co.**, Toronto, and will operate it as a subsidiary. Addition of facilities for manufacture of folding and set-up boxes has been announced. **Frank Shannon** continues as president of **Automatic Paper Box Co.**, whose board will be enlarged to embrace several **RCS** directors.

Latchford-Marble Glass Co., Los Angeles, has installed a new **Hartford Empire** six-section bottle-making machine, said to be the first of its kind in operation on the Pacific Coast.

J. Paul Smith, 64, president of **The Visking Corp.**, died suddenly, May 4, at a Chicago hospital. He had been president of **Visking** for eight years and before that executive vice president. Mr. Smith went to **Visking** in 1931 from **E. I. du Pont de Nemours & Co., Inc.**, where he was instrumental in bringing cellophane to this country from France.

Benjamin H. Roberts, president of **Bird & Son, Inc.**, East Walpole, Mass., from 1935 to 1946, died at the Massachusetts General Hospital, Boston, May 26, at the age of 57. Mr. Roberts had been with the **Bird** organization since 1921. He retired in 1947 due to ill health.



*Fresh Ideas
make sales grow
like these
and grow!*



*displays



*set-up
boxes



*folding cartons

Let Chaspec help your sales grow too!...For fresher merchandising displays and packages of distinction, call on us today!

THE **Chaspec**
MANUFACTURING COMPANY
Greenwich, Connecticut

Established 1920

Chaspec has grown too, and offers an exceptional opportunity to one or two top-notch sales representatives in N. Y. and out of town.

For your information

The Glass Container Mfrs. Institute, Inc., has undertaken an extensive promotion program for glass bottles and jars to extend markets for all glass-packed products. The campaign includes magazines, television, news, trade and labor papers, augmented by promotion and merchandising and consumer education. According to **R. L. Cheney**, GCMI director of marketing, some nine billion dollars were spent on packaging in the United States last year, with more than \$700,000,000 expended on glass containers and \$185,000,000 on closures, or a total of \$900,000,000. Department of Commerce figures indicate that a total of almost 18 billion new glass containers were shipped by the glass-container manufacturers in 1954.

At a recent meeting of the board of directors of the **Packaging Institute**, **Charles A. Feld** was elected executive director, succeeding **L. V. Burton**; Dr. Burton was named staff consultant; **R. Chester Reed** of the Texas Co., vice president of the Institute, was also elected treasurer, and **Miss Edna D. Higgins**, Institute assistant secretary, was elected secretary and assistant treasurer.

The **Commodity Standards Div., Office of Technical Services** has submitted a revision of Simplified Practice Recommendation R46-39, "Tissue Paper," to manufacturers for review. The proposed revision limits the recommendation to the properties, packaging, labeling and marking of wrapping tissue only. The proposed changes were recommended by the Wrapping Tissue Committee of the **Tissue Assn., Inc.** Mimeographed copies of the proposed revision may be obtained from the Commodity Standards Div., Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C.

A new full-color, 25-min. sound-slide film, "Push-Button Living," released by **General Chemical Division, Allied Chemical & Dye Corp.**, tells the complete story of aerosols and the spectacular growth of the aerosol industry. The film was previewed at the mid-year meeting of the Chemical Specialties' Mfrs. Assn. in Chicago. It is available free for public showing in two versions: one for sales-development use by members of the aerosol industry; the other for screenings before business, educational, service club and similar groups. The film may be obtained through any of General Chemical's sales offices or from the company's Generator Dept., 40 Rector St., New York 6.

The **Chemical Specialties Mfrs.' Assn.** has prepared a newly revised digest of federal and municipal regulations covering

sales and shipment of pressurized aerosol products. Prepared by the subcommittee on public regulations of the association's aerosol scientific committee, the publication deals primarily with regulations of the Interstate Commerce Commission on labeling, product definitions and shipping-container specifications. The digest is \$6. In addition, the association is offering a 52-page compilation of industry-recommended manufacturing and sales practices, "Manual for Vendors and Fillers of Aerosols and Pressurized Packages," which includes sections on labeling, pre-marketing product checks, fillers, safety tips and postal regulations on mailing of pressurized packages. Both the digest and the manual, which is 50 cents, may be obtained on request to the Chemical Specialties Mfrs.' Assn., 50 E. 41 St., New York 17.

In research conducted for the **Bergstrom Paper Co.**, Neenah, Wis., **Battelle Memorial Institute** has developed an electrostatic process for coating paper which is completely dry and thus eliminates problems resulting from paper wetting in conventional coating systems. The process was announced at the Sixth Coating Conference of the Technical Assn. of Pulp & Paper Industries by **R. B. Reif**, a Battelle graphic arts physicist. In the new process, an electrically charged dust cloud of pigment and heat-sensitive resinous binder is driven against a moving belt of paper by an electrostatic field. The coating is fixed by the application of heat. Cost of the process is said to compare favorably with conventional methods.

The **Celotex Corp.** has made available a Cushioning Nomogram developed by **Container Laboratories, Inc.**, Chicago, for determining the exact thickness of cushioning material required for a specific shipment. To use the nomogram, the packager needs to know only the fragility of the merchandise, its weight, bearing and height of drop expected in normal handling. Further information may be obtained from the Industrial Sales Dept., The Celotex Corp., 120 S. LaSalle St., Chicago 3.

Dr. La Verne E. Clifcorn, research associate with the American Can Co., has been elected 1955-56 president of the **Institute of Food Technologists**.

The **U. S. Department of Commerce** has published Business Service Bulletin No. 122, "A Summary of Information on Packaging Materials Handling." Free copies are available from the department, Washington 25, D. C., or from any of its field offices.

The **U. S. Department of Defense** has published Military Specification MIL-P-8574A, "Preservation and Packaging Procedures Utilizing Volatile Corrosion Inhibitor Treated Materials," superseding MIL-V-8564 (Aer).

The **1955 International Soft Drink Industry Exposition** will be held Nov. 14-17 in the Dinner Key Exposition Bldg., Miami, Fla. New ideas in materials-handling equipment, vending machines, packaging, distribution, advertising or other services will be exhibited. The **American Bottlers of Carbonated Beverages Convention**, with which the Exposition is affiliated, will be devoted to general and specific topics of concern to the bottled soft-drink industry.

The 1955 edition of the **American Tomato Yearbook**, edited by **Dr. John W. Carncross** of Rutgers University College of Agriculture, is now available. The book contains an up-to-date list of recent references to tomato culture, tomato diseases, pests and their control, as well as the names, addresses and projects of persons engaged in tomato research in the U. S. and Canada. Copies are available at \$2 each from the **American Tomato Yearbook**, 8 Elm St., Westfield, N. J. A complete volume 1949-1955 is available at \$7.

The theme of the 10th annual **National Hardware Show**, to be held Oct. 17-21 at Navy Pier, Chicago, will be "A 5-Day Plan for the Hardware Man." A new record attendance of more than 40,000 buyers is expected. Advance registration blanks are available from the National Hardware Show headquarters, Suite 1103, 331 Madison Ave., New York 17.

What's doing

July 12-14—**Second Western Plant Maintenance & Engineering Show**, Pan Pacific Auditorium, Los Angeles.

Aug. 7-10—**International Assn. of Printing House Craftsmen, Inc.**, Hotel Netherland Plaza, Cincinnati, Ohio.

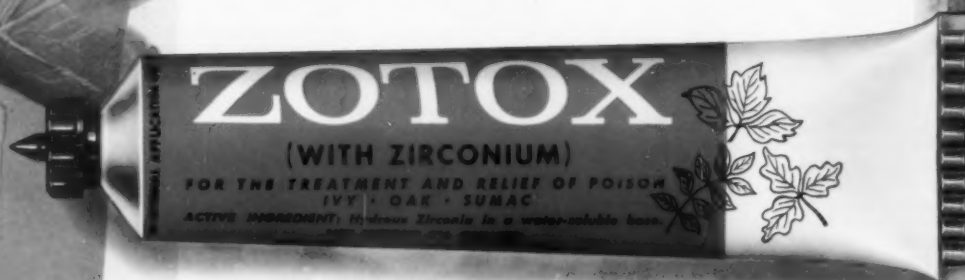
Aug. 21-26—**Third U. S. International Gift & Fancy Goods Show**, Sheraton Astor Hotel, New York.

Aug. 28-30—**First Annual Fancy Food & Confection Show**, Sheraton Astor Hotel, New York.

Aug. 30-31—**Packaging Institute, Petroleum Packaging Committee**, Royal York and King Edward Hotels, Toronto, Canada.

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U. S. patents digest

This digest includes each month the more important patents of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at 25 cents each in currency, money order or certified check; postage stamps not accepted. Edited by H. A. Levey

Booklet Label, L. A. Miller, San Francisco. U.S. 2,706,865, Apr. 26. A label to be secured around a container, comprising an elongated sheet having a plurality of transverse tear lines and a lap portion at each end to be mutually overlapped when the sheet is wrapped around a container, the sheet being just long enough to wrap once around a container with the lap portions in overlapping relation.

Tear-String Applying Means, E. B. Svenson (to Joseph Dixon Crucible Co., Jersey City, N.J.). U.S. 2,706,934, Apr. 26. In combination, means for clamping a paper strip, means for feeding a length of flexible tear string across the paper strip and means for forcing the portion of the string beyond the edges of the strip downwardly through the outer edges of the strip, causing the string to tear slits in the edges of the paper.

Cartons and Method of Making and Assembling Same, S. Pas-jack (to Unipak Cartons Ltd., Vancouver, B. C., Canada). U.S. 2,706,935, Apr. 26. The method of forming a carton body with a lattice-type filler which consists of the following consecutive steps: first placing a filler folded into a flat structure with the ends of some of its strips coated with adhesive upon a sheet material blank fully extended and having side and end areas defined by fold lines, the filler being placed with the ends of some of its strips to register with a carton body side area and the ends of others of the strips in register with a body end area, subsequently folding the parts of the carton body extending beyond the flat filler structure inwardly to cover the filler.

Article Gripping and Transfer Mechanism, A. L. Steck (one-half to Knox Glass Bottle Co., Knox, Pa.) U.S. 2,707,044, Apr. 26. In apparatus for printing labels on bottles or the like, means for gripping the article to be printed and for transferring it to position in register with the printing device, the means consisting of a shaft actuated by a Geneva drive to subject the shaft to angular movements in increments of a revolution.

Egg Carton, O. L. Vines (to Alford Cartons, Ridgefield Park, N.J.). U.S. 2,707,073, Apr. 26. A collapsible egg carton comprising outer side walls, two bottom walls communicating with the lower edges of the two side walls, upstanding inside walls integrally connected to the bottom wall sections and forming a longitudinal partition for the carton, the upstanding inside walls being discontinuously connected along their upper edges and being provided with fold lines and cut lines which alternately form longitudinally of the partition adjacent its upper extremity a horizontal band, an upwardly projecting inverted V-shaped portion and a downwardly extending recessed portion, the carton being further provided with upstanding transverse partition members integrally connected at the upper extremities of their ends to the outer side walls adjacent the upper edges.

Garment-Holding Bag, D. Rubin, Detroit, Mich. U.S. Re: 23,995, May 3. A garment-holding bag comprising a sheet folded along an intermediate vertical line to form registering front and rear portions, the portions being secured to one another and permanently closed along the bottom edge for the full width thereof and permanently closed at the top for one-half the width from the folded edge to the center.

Twine and Process of Preparing the Same, J. C. Pullman (to American Cyanamid Co., New York). U.S. 2,707,367 and 2,707,368, May 3. A process for producing twine comprising the steps of coating one face of a tissue-paper web with an adhesive material, by superimposing and imbedding on the web a plurality of adhesive-material-coated glass fibrous strands, in parallel alignment, covering the strand-imbedded, adhesive-coated web with a tissue-paper web and uniting these components into a flat assembly, thereafter twisting the assembly into a twine.

Bag-Bottom Forming Device for Paper-Bag Manufacturing Machines, M. Rawe, Tecklenburg, Germany. U.S. 2,707,421, May 3. A device comprising a frame, two shafts mounted in spaced parallel relation in frame, pulleys secure to the shafts,

two pairs of endless carrier means trained over pulleys and extending in upper and lower strands from one of the shafts to the other.

Container-Orienting Mechanism, T. H. Gewecke (to Baxter Laboratories, Inc., Morton Grove, Ill.). U.S. 2,707,547, May 3. A container-orienting mechanism for orienting a container having an external spotting recess, comprising means for longitudinally conveying the container, guide means adapted to engage the external spotting recess and a longitudinally disposed member in spaced relation to conveying means and the guide means, the member being adapted to tilt and rotate the container, guide means being adapted upon proper orientation of the container to stop its rotation by engagement with external spotting recess.

Packaging of Ferrous Metal Objects, M. J. Shnitzer, T. P. Norton and S. G. Kindred (to The Gillette Co., a corporation of Delaware). U.S. 2,707,551, May 3. In a razor-blade dispensing magazine having an exit opening therein a plurality of stacked steel razor blades housed in the magazine, each blade having at least one sharpened edge, means for maintaining the blades with their sharpened edges out of contact with the magazine and in position for successive individual ejection from the magazine through the exit opening.

Shipping Unit and Tensioning Means Therefor, S. G. Yount, Los Angeles. U.S. 2,707,553, May 3. A shipping unit comprising, in combination: a flat base of paper-stock material; an assembly of a plurality of vertical stacks of discrete shipping containers positioned on plate in abutting relation and under pressure contact with one another upon opposed vertical surfaces; and means uniformly maintaining the pressure contact between the discrete shipping containers throughout the height of the assembly, including a tensioning tube of paper material tightly encircling the periphery of the assembly.

Box or Container, K. T. Buttery (to Sutherland Paper Co., Kalamazoo, Mich.). U.S. 2,707,586, May 3. A collapsible box or container comprising a hexagonal bottom having side walls hingedly connected to the several edges thereof and a hexagonal top hingedly connected along one edge to the upper edge of one of the side walls and having a sealing flap on its opposite edge adhesively secured to the side wall opposite the side wall to which the top is connected.

Packing Cartons, J. A. Wittstein, Hamden, Conn. U.S. 2,707,587, May 3. A carton comprising a bottom member and a cover member, each of which comprises a body portion and flanges at the edges of the body portion lying at substantially right angles thereto, the flanges of the cover overlapping those of the bottom when the two parts are assembled.

Paper Closure Member and Paper Container, W. E. Amberg (to Lily-Tulip Corp., a corporation of Delaware). U.S. 2,707,588, May 3. A paper container having an open end and external rim about its open end, and internal shoulder adjacent its open end and a uniform internal surface between the internal shoulder and the open end, and a one-piece, resilient, paper closure member for the open end of the container, including a closure wall portion.

Dispensing Device, E. B. Duell, Princeton, N.J. U.S. 2,708,026, May 10. A molded plastic dispensing container for tablets or the like comprising a box for the tablets, a two-way slidable cover for the box, interengaging means between box and cover to hold the cover on the box for sliding movement and a plurality of spaced pockets in the bottom wall of box for the tablets to be dispensed.

Bag-Making Machine, F. C. Binnall, River Forest, Ill. U.S. 2,707,985, May 10. In a machine for forming bags from a multi-ply web of thermoplastic film stock, the combination of means for intermittently feeding the web through the machine, a device for severing the web transversely of its length and

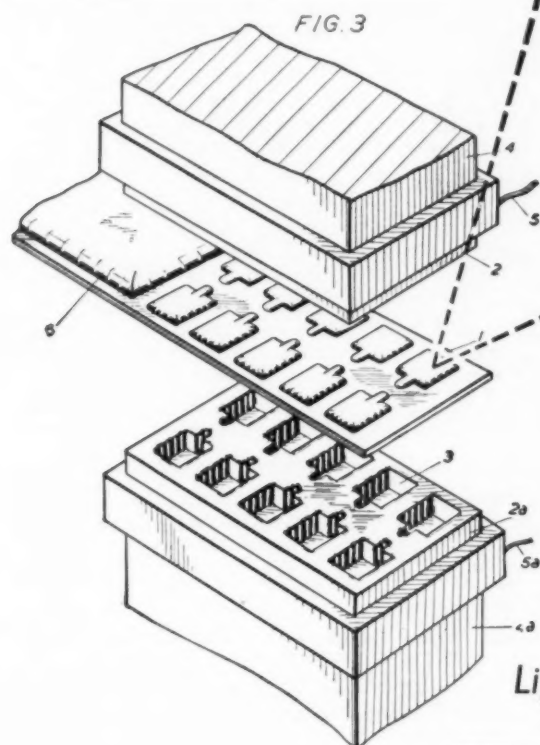
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U. S. patents digest

for simultaneously sealing substantial areas of the plies along both of the severed edges thereof and means for operating the device in synchronism with feeding means to cause the web to be severed and sealed each time it is brought to rest by feeding means.

Container Trays for Fruit Units, J. E. Murphy and M. Schnall (to See-Qual Package Corp., New York). U.S. 2,708,027, May 10. In a molded container tray of the type adapted to constitute part of a wrapped housing for a row of fruit units, two opposite end walls, a pair of laterally opposite longitudinally extending upper rails disposed between and yieldably connected to end walls, a pair of laterally opposite longitudinally extending lower rails disposed between and connected to end walls, two parallel rows of spaced fruit-seating pads integral with lower rails and extending toward each other, the pads of rows being arranged in opposed pairs and having substantially concavely curved supporting surfaces facing the interior of the tray for individually receiving fruit units.

Fruit Container, J. E. Murphy and M. Schnall (to See-Qual Package Corp., New York). U.S. 2,708,028, May 10. In a ventilated package for a row of selected fruit units, a plastic tray for receiving fruit units and an arrangement to facilitate enrobing of a filled tray, the tray comprising two opposite end walls, a pair of laterally opposite longitudinal base rails extending between end walls and longitudinally aligned backing members between and rigidly joined to rails spaced apart to provide ventilating regions between them.

Comb Display Device, L. R. Kahn (to E. I. du Pont de Nemours & Co., Wilmington, Del.). U.S. 2,708,029, May 10. As an article of manufacture a comb display device comprising a flat sheet of paper cut into three sections two of which are matching side sections joined to one another through a first narrow section scored for folding so that, when the two side sections are folded along the scored lines, the periphery of one of the side sections is superimposed upon the periphery of the other, the third section being an inner section of similar shape but with smaller area than either of side sections.

Bottle for Liquid Dairy Products, E. Sokolik, New Brighton, Minn. U.S. 2,708,049, May 10. In a bottle, a body portion, a reduced neck formed upon the bottle and providing an outlet passage for the contents of the bottle and a means for holding the bottle, a first annular bead formed upon the reduced neck intermediate the ends of the neck and spaced a substantial distance inwardly of the free end of the neck and projecting radially of the neck.

Hermetically Sealed Container, P. R. Luertz and W. O. Leurtzing (to Transparent Containers, Inc., Camden, N.J.). U.S. 2,708,050, May 10. A container having an open end with a curved outer corner surface, an exterior finish adjacent open end, including a cylindrical sealing surface extending axially inwardly from it and a radially outwardly extending shoulder surface at the inner end of the cylindrical sealing surface, a closure for the open end of the container, closure comprising a circular panel and a cylindrical skirt connected to the panel and with the cylindrical sealing surface, panel and shoulder surface forming a cavity for a sealing body.

Collapsible Carton, W. H. Inman (to Bloomer Bros. Co., Newark, N.Y.). U.S. 2,708,065, May 10. A collapsible carton having self-erecting end closures comprising a one-piece blank cut, scored and folded to form foldably connected front, bottom and back walls, the front and back walls each having an end-closure flap foldably connected with it at each end, each of end-closure flaps being formed with a fold line extending diagonally inwardly from a corner of the carton, fold lines in flaps being adapted to fold inwardly at fold lines between the walls when the back and bottom walls are collapsed toward each other.

Yarn-Tube Wrapper, W. F. Caraher (to E. I. du Pont de Nemours & Co., Wilmington, Del.). U.S. 2,708,066, May 10. A suspending wrap for yarn tubes comprising a paperboard container of substantially rectangular cross section having inner and outer top closure flaps together constituting a two-layer top wall, the inner flap being slotted and the outer flap having a tab struck downwardly from it and inserted through the slot.

Heat-Sealable, Valve-Type Bag, J. B. Paton (Paton-Chandler Process Co., Detroit, Mich.). U.S. 2,708,067, May 10. A package for powdered materials and the like, the package having



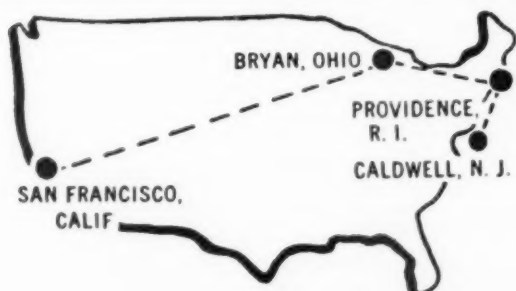
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U. S. patents digest

opposed front and back, gusset-like re-entrant fronts of material integral with the front and back and forming sides for the package connecting the front and back, a bottom seal and a top seal closing the front and back together and adhering the front and back and the gusset fronts together, and a filling tube forming seal extending part-way across the package from one edge thereof inwardly and spaced from the top seal.

Nonspillable Container with Emanation Control, J. B. Gooken, Corona del Mar, Calif. U.S. 2,708,138, May 10. A sectional spherical shell having a spider having an annular rim with annular recess in the edges and radially disposed tubular elements with open passage through them extended inwardly from the shell to points spaced from the center thereof, the sections of the shell having their edges positioned in recesses and a band slidably mounted on shell intermediate of the edges of sections and having openings through them, the band adapted to be positioned whereby the openings through it register with the open passages of the tubular elements.

Sheet-Guiding Apparatus for Tube-Forming Machines, H. G. Allen and C. Dellinger (to Daystrom, Inc., a corporation of New Jersey). U.S. 2,708,394, May 17. A device to guide alternately fed sheets delivered in different paths to a pair of spaced mandrels comprising an oscillating rod extending transversely of the path of travel of the sheets, a triangular shaped deflector mounted on the rod and adapted to be moved to either of two positions by the oscillation of the rod.

Dispensing Package, K. Klause (to Marathon Corp., Rothschild, Wis.). U.S. 2,708,510, May 17. A carton for dispensing selected lengths of sheet material from a roll of such material contained in the carton, the carton comprising front, bottom, rear and end walls, a cover, a cutter blade fixed to the inside surface of front wall adjacent the top to provide means for severing the selected lengths from the remainder of the roll of sheet material within the carton, and means provided in the front wall adjacent the lower edge of the cutter blade to protect lower edge from interference with the leading edge of lengths of sheeting being withdrawn from carton.

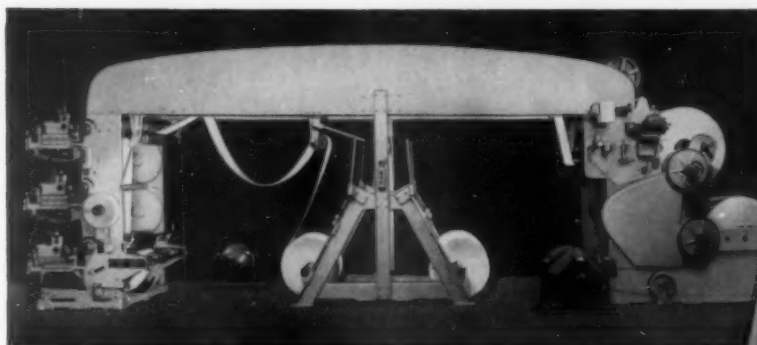
Closure for Dispensing Containers, G. S. Dettelbach, Atlanta, Ga. U.S. 2,708,535, May 17. A closure member of a dispensing container having means for providing a dispensing opening, the closure member being formed from an inherently flexible material including a cap portion shiftable relatively to aid dispensing opening for seated and unseated association with respect thereto, ear means integral with cap portion and connecting cap portion, the means providing the dispensing opening and serving to restrain shifting movement of cap portion in relation to the dispensing opening.

Apparatus and Method of Receiving and Bagging Articles, M. E. Toby (to Package Enterprises, Inc., Oakland, Calif.). U.S. 2,708,539, May 17. Apparatus comprising a horizontally disposed rotor element having a plurality of sets of radially extending guide means thereon, the guide means sets being equally spaced from one another, means for intermittently rotating the element a distance equal to the circumferential spacing of the guide means, sets, a plunger mechanism disposed over element, means for advancing plunger mechanism radially outwardly and substantially immediately over one of the sets of guide means, and means for synchronizing the movement of plunger mechanism with rotation of the element whereby the plunger mechanism will advance over one of the sets of guide means at the end of a cycle of rotation of element.

End-Closing, Top-Opening Shipping Container, T. L. Seigh (to Cornell Paperboard Products Co., a corporation of Wisconsin). U.S. 2,708,545, May 17. A container having wall portions in series connection and defined intermediate the end of the series by score lines, the wall portions being folded upon the score lines to comprise a container body having lapping portions only at the end, a tape connecting the wall portions at the ends of the series to complete such body, the tape having adhesive connection with last-mentioned wall portions, flaps on the several wall portions, opposing flaps at each end of the body comprising inner flaps and other opposing flaps at each end of the inner flaps; the parts of the wall portions of the container to which the tape is adherent having coatings underlying at least one end of the tape and to which such tape end is less adherent than to uncoated wall portions of the container.

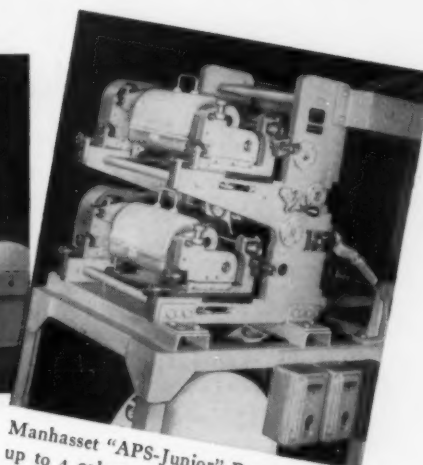
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(This article continued from page 103)
the window carton is considered practically essential to this product, since customers insist on seeing the size and shape of the pieces.

The Refined Macaroni Co., Brooklyn, now uses 50-gauge polyester film in the window of its folding carton for Julietta Macaroni Specialties and finds that problems of breakage in transit and in store handling have practically disappeared.

One of the real pioneers of packaging use of polyester film, this company expresses itself as "amazed" at the strength, durability and tear resistance of the film.

Summary

From the foregoing experiences in practical, commercial use, it can be concluded that polyester film has arrived, considerably ahead of schedule, as a workable and practical packaging material.

It is of outstanding value wherever exceptional puncture and tear resistance over a long shelf life are a requirement.

Its cost and handling problems are no greater than those of other new plastic films that have been introduced in the recent past and no one doubts that they will be greatly reduced in the near future.

The conclusions, for packagers who might consider its use, are clear and simple: If other lower-cost transparent films are doing an adequate job for your product, it would be foolish to pay more for polyester. But if your present film fails to meet the physical, chemical or visibility requirements of your package, then polyester film should be investigated.

CREDITS: Suppliers of packages illustrated in this article, using DuPont's "Mylar" polyester film: Renwal toys and Dozy Doe's slipper set—Hygrade Folding Box Corp., 90-28 Van Wyck Expressway, Jamaica 18, N. Y. Heublein—United States Envelope Co., Springfield 2, Mass. Lily-Tulip—United Board & Carton Corp., 2 Park Ave., New York 16. De Martini and National Clothes Pin—Du Pont direct. Talon—National Folding Box Co., Inc., New Haven 4, Conn. Cypress ornaments—Milprint, Inc., 4200 N. Holton St., Milwaukee 1. Windo-Treat—Service Folding Box Co., Inc., 28 E. 29 St., Brooklyn 28. A & H doll—Paramount Carton Corp., Rockaway, N. Y. Julietta macaroni—Color Offset Co., Inc., 70 Washington St., Brooklyn 1.

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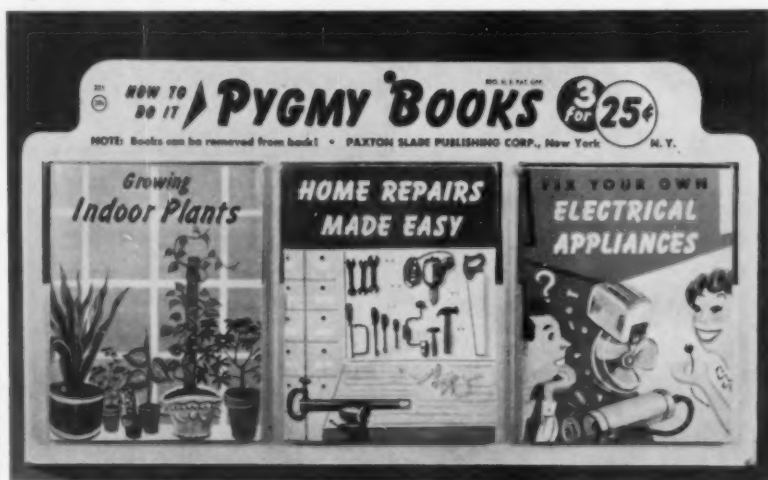


Formed-plastic pockets for pocket books

Pocket-sized paperbound books have, in the last few years, helped bring about a near revolution in book merchandising. No longer are books on sale only in specialized book and department stores; they can be found

with a packaging and display idea that may help spread the sale of midget-sized books to some of the few places which they have not as yet reached.

Chief saving is in the matter of

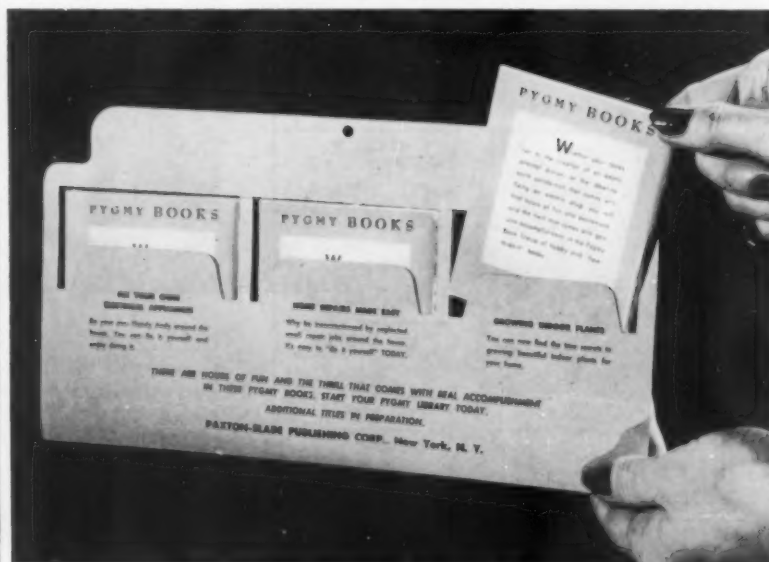


THREE IN A ROW, Paxton Slade's "how-to-do-it" books are protected behind projecting, form-fitting acetate windows in a paperboard display package that can be conveniently hung up anywhere.

almost anywhere—in supermarkets, five-and-tens, newsstands and many other retail outlets.

In most cases, display is standardized. The familiar wire or wooden racks, distributed by publishers, are used to hold an assortment of titles. Now, however, Paxton Slade Publishing Corp., New York, has come up

space. The usual display racks use up a rather large amount of valuable floor or counter room, especially when the amount of actual merchandise on display is considered. Paxton Slade's new display package, which holds a set of three tiny 3-by-4-in. books, can be hung up on a hook in any vacant spot in a store—on a wall, post, cash-



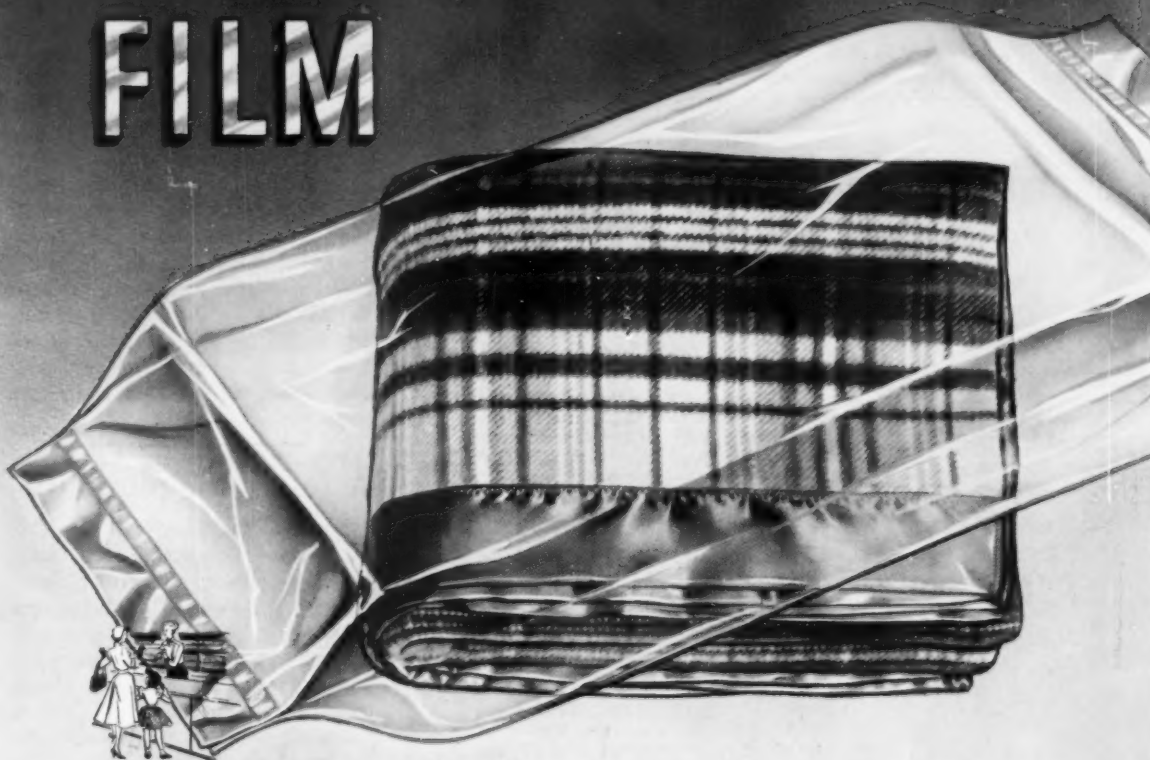
SLOTS IN THE REAR of the display package permit removal of books after purchase, but cut down on handling and pilferage in the store.

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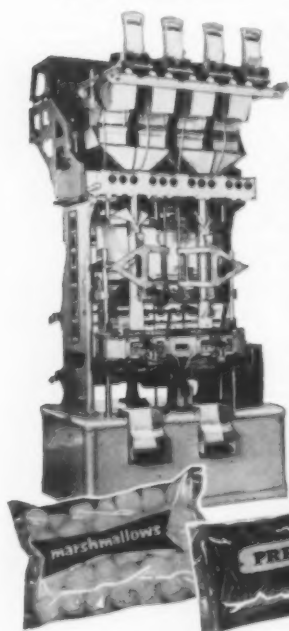
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Speeds over 150 packages per minute	No	No	No	Yes	
Simple hand crank package length adjustment	No	No	No	No	
Complete counterbalancing to eliminate shock loading	No	No	No	No	
All motions by positive cam action	No	No	No	No	



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The display is also unusual in that it is an example of still another industry into which the use of formed-plastic packaging has extended. It consists of a sheet of acetate into which three pockets have been formed, each just large enough to hold a book. After these have been inserted into their pockets, the transparent sheet is glued onto a printed, die-cut card. Three slots in this card make it possible to remove the books from the rear after they have been purchased.

In addition to providing a more flexible display unit, the package has other advantages: pilferage is reduced, covers are kept free from soiling and fewer customers are tempted to indulge in hit-and-run reading without buying.

For the introductory use of this display, the publisher is offering a set of three 32-page instruction books, aimed at the growing "do-it-yourself" fad. A number of other titles is also being prepared.

Paxton-Slade at present is doing the entire job of editing and printing the books and is forming, filling and gluing the new combination plastic-and-paperboard packages in its own plant.

A tester for pliability

(This article continued from page 130) be discussed in detail at this time. From preliminary examination, however, several general conclusions can be drawn at this time. There is only a slight correlation between pliability and stiffness; the exceptions almost outnumber the comparisons. There is practically no correlation between pliability and spring-back. Some of the most pliable materials have a high angle of spring-back and some of the least pliable materials have low spring-back; equally apparent are the materials with good pliability and low spring-back, and with poor pliability and high spring-back.

This means that pliability must be recognized as a completely new property in evaluating the acceptability of wrapping materials. It is distinctly different from such properties as stiffness, flexibility and resistance to fold. The Pliability Tester may very well become a standard for measuring this newly defined property.

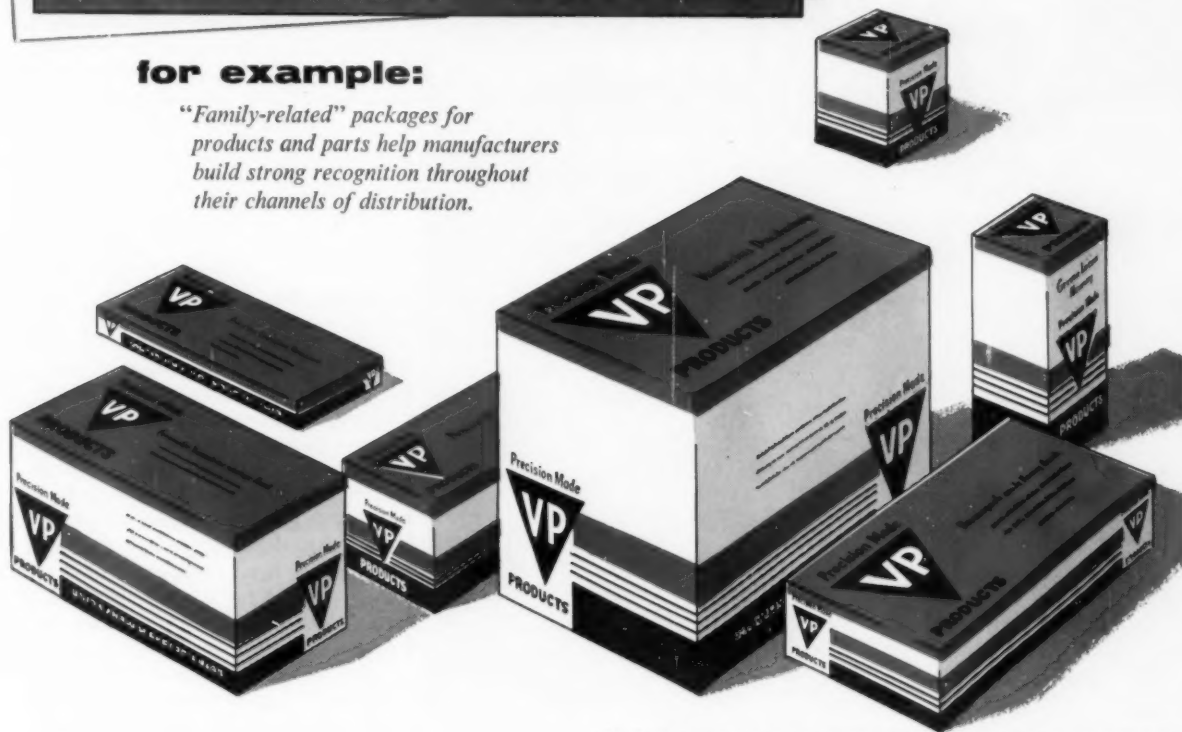
But all of this development work would be pointless if it could not be

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tors considered. Again, it appears that the correlation would be almost perfect except for the better-liked mate-

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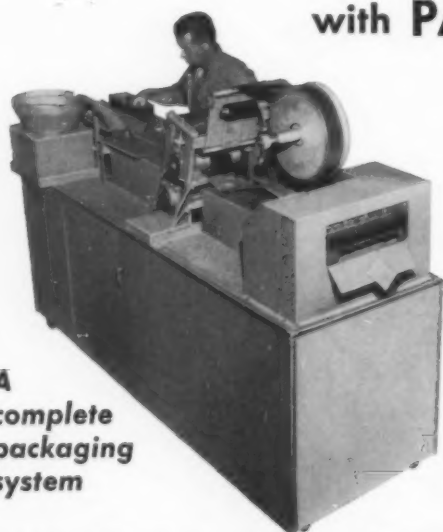


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shown that the numerical values given by the Pliability Tester are a reasonable measure of the suitability of materials to wrapping operations. It remained to be shown that the numerical values given by the Pliability Tester relate directly to the pliability of a given material as evaluated by personnel using these materials. Further, it remained to be shown that the property of pliability has a substantial influence on the general acceptability of wrapping materials to personnel performing the wrapping operation.

Personnel factor

An opinion survey was conducted at the Rossford Ordnance Depot, using rolls of 12 typical materials with pliability values ranging from the most pliable to the least pliable. An attempt was made to select materials with both high and low spring-back and high and low stiffness values.

Twelve depot personnel normally engaged in hand-wrapping operations were selected for this special evaluation. Each worker made a number of packages using items of two different sizes. The personnel were rotated so that each person worked with all of the materials. The Grade A and Grade C materials were each evaluated separately.

After using the materials, each person, under supervision, filled out a questionnaire which resulted in a systematic ranking of their preferences for the materials, all factors considered. Up to this point, the property of pliability was not singled out as the characteristic being evaluated. Then, each person was requested again to handle and feel the various materials and to rank them in the order of pliability, irrespective of their initially recorded personal preferences.

These data are now being studied and, while details cannot be recited, it can be generally stated that there is a direct and convincing correlation between the values of the Pliability Tester and the ranking of material as to pliability by operating personnel. Rankings are almost identical, the main exception being that materials with dead-fold characteristics were often rated by the workers as being more pliable than indicated by the Pliability Tester.

Even more surprising is the correlation which exists between the pliability values and the over-all personal preferences for the material, all fac-

tors considered. Again, it appears that the correlation would be almost perfect except for the better-liked materials with dead-fold characteristics and for the self-adherence characteristics of the Grade C materials.

Conclusions

The Pliability Tester shows great promise as a measure of suitability for wrapping purposes and appears to represent a true and accurate measure of the ease with which a sheet of paper or other flexible material can be handled and molded to conform around an object being wrapped. If the instrument is adopted as a standard piece of testing apparatus by the military departments, it is logical to assume that it could be used with equal success in the evaluation of materials other than greaseproof barrier materials. Studies may be undertaken to broaden the application of this instrument to include waterproof materials, water-vaporproof materials, flexible cushioning wraps and other materials where pliability is an important factor.

Although the development of this instrument has been sponsored by the Ordnance Corps, Picatinny Arsenal, for particular types of barrier materials, it should be of general interest to the packaging field, since it should be equally applicable to commercial wrapping materials.

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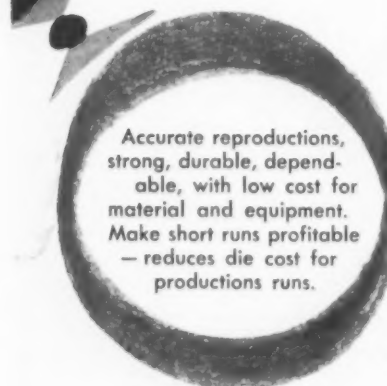
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Bundlers turn to film

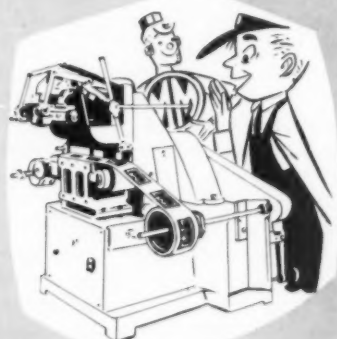
(This article continued from page 80) but not spectacularly so. In carload lots, 40-lb. basis-weight bleached sulphite or water-finish kraft costs about 1.13 cents per thousand square inches, while 300 MS-1 or MST-54 cellophane costs from 2.7 to 2.9 cents. To the cost of paper must be added the cost of glue and its attendant problems, and cost of printing or marking.

Reasons cited by several packagers, for switching from kraft-paper to cellophane bundling include: visibility, easier and more secure sealing, ease of sliding into shipping cases, faster bundling (cellophane is said to run twice as fast as paper), fewer roll changes, less-costly wrapping equipment and improved moisture protection.

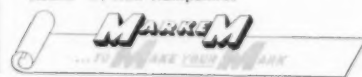
Others have estimated that cellophane bundling lowers over-all packaging and distribution costs by as much as 25%, with elimination of various-sized paperboard boxes and heavy paper overwraps producing lighter shipping weights. Pilfering, because it is so readily apparent, is discouraged; yet the package is always on display, with instant identification of brand, variety and size of package, and with full protection from dust, dirt and finger marks.

Each packaged product must be studied for its particular distribution requirements, but experience to date indicates that transparent bundling is a trend too important to be ignored.

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MODERN PACKAGING

PACKAGE
type

Packaging school grows

The packaging course at Michigan needed, the following are of ton

NAPA container forum

Five speakers gave purchasing agents representing a broad cross-section of American industry a glimpse at latest developments in packaging recently. They participated in a Container Forum on the subject, "What Is New in the Container Field," held in conjunction with the recent annual convention of the National Assn. of Purchasing Agents in New York.

Dr. Roger H. Lueck of the American Can Co., New York, outlined some of the research now being carried on by can manufacturers on the development of a 100% tinless can. He discussed the work that has been done with chemically treated steel, aluminum alloy sheet, nickel-coated steel, titanium and other metals which might be used as replacements for tin.

Russell R. Radford of the Bemis Bro. Bag Co., St. Louis, described some of the latest developments in multiwall paper bags, including one which uses a polyethylene seam that is extruded directly onto the end of the bag and another which utilizes paper reinforced with glass fibre.

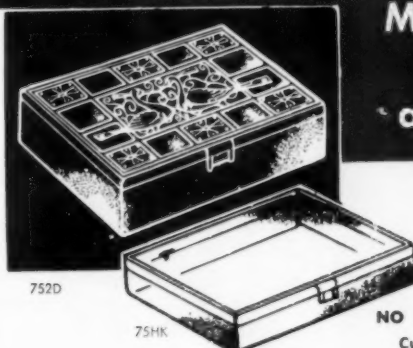
Dr. J. P. Poole of the Brockway Glass Co., Brockway, Pa., told the purchasing agents about the work his company has carried on in the surface treatment of glass, particularly by means of silicones, to produce glass bottles that are said to be both stronger and lighter, and which are reported to be especially adaptable for use in aerosol containers.

P. J. Murphy, Millsplastic Div. of Continental Can Co., New York, outlined the many new developments in recent years in plastics for packaging, giving special emphasis to the recently introduced plastic tubes. These, he said, have the greatest growth potential of all new plastic containers. He stated they are "in the same period of adolescence today as plastic bottles were five years ago."

David Riggs of Container Corp. of America, Chicago, discussed the supply and demand situation in the paperboard industry, concluding that "all the storm warnings are here for demand for corrugated to outrun supply," with price advances likely to occur during the summer.

The forum, which is an annual affair, was organized by the Container Committee of the NAPA, under the chairmanship of Lee R. Forker of the Quaker State Oil Refining Corp., Oil City, Pa.

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Packaging school grows

The packaging course at Michigan State College—first and only college undergraduate major leading to a degree in packaging—is now the ninth largest in the School of Agriculture, James W. Goff, instructor in charge of the course, told the Industry Advisory Committee on Packaging Curriculum at its annual meeting in East Lansing recently. After only three years, the packaging course now has 46 fully enrolled students and expects close to 100 next year and perhaps 200 in five years, Mr. Goff said. He stressed the need for increased equipment, staff and space.

In the past year students have formed a Packaging Club, which was chartered with 39 members. A service club, its chief mission is to try to interest high-school graduates in the upper third of their class in a packaging course and career. Indicative of their interest in the field, 35 of the students attended the National Packaging Exposition in Chicago in April at their own expense.

Pointing out that Michigan State has developed its unique "school of packaging" up to this point without major outside financial aid, Mr. Goff stressed that help was now needed from industry in the way of endowments, scholarships and donation of equipment. Several valuable pieces of testing equipment were received as donations or purchased by the school last year. Of the equipment still

needed, the following are of top priority:

- S. & S. corrugated sample table, 66 in.
- Baldwin FGT-SR-4 universal testing machine
- Weatherometer
- Beach puncture tester
- Tinius Olson M.I.T. folding endurance tester
- Taber V-5 stiffness tester, complete
- Gurley-Hill H.P.S. tester
- Precision sample cutter for Elmen-dorf tear tester

Paper and paperboard micrometer.

Cost of these items was estimated to range from \$225 to \$22,000. The first three items on the list were said to be permanently beyond reach of the department's budget, although it was suggested that it might be possible to get State funds to match donations toward any of the items.

A formal research project on the use of plastic films to lengthen the storage life of crated apples is now being conducted in cooperation with the Department of Horticulture. An informal market study is being made on packaging of potted plants and cut flowers. Projected for next year is expansion of a night course now conducted on the graduate level for a General Motors Institute group.

A renewed plea was made by the school for summer placement of students in packaging plants, which is part of the requirement for a degree.

Aerosols gain 33%

The aerosol industry now represents a \$190-million-per-year business at the retail level, an increase for 1954 of approximately 33% over figures for the preceding year. This estimate was made in the fourth annual aerosol products survey made by the Chemical Specialties Mfrs. Assn., with results announced at the association's 41st mid-year meeting at the Drake Hotel, Chicago.

The survey, which is based on confidential questionnaires sent to aerosol fillers and manufacturers of aerosol valves and containers, includes only non-food pressurized packages; all food products, such as whipped cream, are omitted.

Figures supplied by 53 aerosol fillers report a total of 169,362,104 units produced, including Government contracts, in 1954. To give a

picture of the entire industry, including those companies which did not report their production, the association has projected this total to an estimated 185,000,000 units. In 1953, 37 companies reported a total of 131,515,442 units produced.

Aerosol-container manufacturers report that they turned out a total of 216,205,000 units of all sizes during 1954 and aerosol-valve makers list a production of 197,079,000 units. The difference between these totals, which include not only those containers and valves designed for use by non-food products, and the actual aerosol output can be accounted for, says the CSMA, by the unused inventories built up by the fillers.

Leading the list of products packed in aerosol containers, as usual, were the insecticides, including space and



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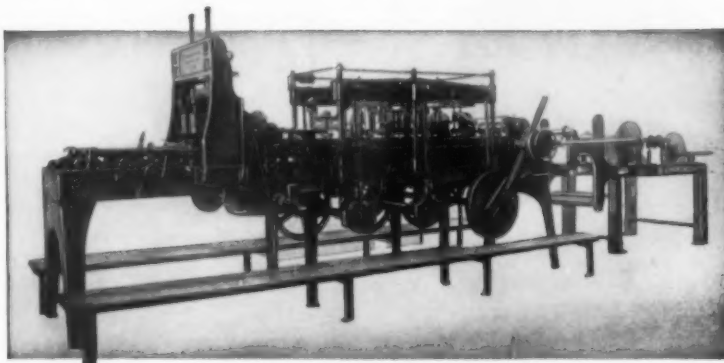
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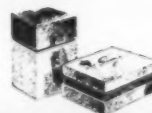
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CLOSURES

| Canco research center

residual insecticides and mothproofers. A total production of 43,179,070 units of these products was reported by companies participating in the survey. Closely following them came shaving lather, with a total of 42,294,628 units, representing an increase over 1953 of more than 10 million cans.

The greatest growth, however, was reported by the next category of products, a general group lumped under the heading "other personal products," and including such things as hair lacquers, shampoos, perfumes, personal deodorants, suntan oil, hand lotion, etc., in both metal and glass. These items accounted for 40,379,123 containers in 1954. Room deodorants ranked next in size, followed by paints, "snow" and other miscellaneous products.

A change in the popularity of container sizes was noted by the association. In previous years, the 12-oz. container was used by a margin of almost two to one over all others, while last year the survey shows the output to have been almost equally divided between this size and those holding 6 oz. or less.

The Aerosol Division was one of the six active CSMA divisions to participate in the Chicago meeting. At another session, Dr. A. H. Gee of Foster D. Snell, Inc., predicted that there may be a rash of complicated state laws which will require precautionary labeling of consumer chemical specialties, including such products as disinfectants, aerosols and waxes. He urged manufacturers to take the lead in giving this information voluntarily.

Robert J. Morse, attorney for Boyle-Midway, Inc., recommended that association members launch an education campaign among consumers on safe drug handling. Declaring that simple "caution" statements are not enough, Mr. Morse, speaking as vice chairman of the association's precautionary labeling and legislative committee, said that labels should show not only the composition of ingredients that might be potentially harmful, an affirmative statement of hazards and, when necessary, the antidote.

Problems pertaining to the mailing and shipment of aerosols were discussed by E. A. Riley, U. S. Post Office Department; H. A. Campbell, Bureau of Explosives, Assn. of American Railroads, and R. H. Foltz, transportation department, General Chemical Div., Allied Chemical & Dye Corp.

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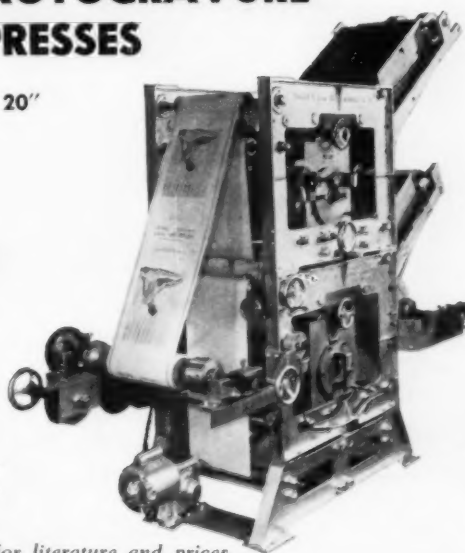
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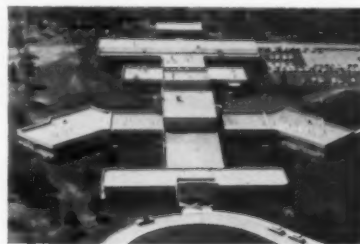
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Canco research center

Snipping a ribbon of tinless metal, American Can Co. on May 26 observed the formal opening of its new 104,000 sq. ft. research and development center, located on a 40-acre landscaped tract near Chicago at suburban Barrington, Ill. On hand for the dedication ceremonies, in addition to a group of Canco executives headed by William C. Stolk, Canco president, were Ezra Taft Benson, Secretary of



Agriculture, and some 200 scientists from 60 universities and industrial laboratories throughout the nation.

Described as the world's largest unit of its type devoted to food and container research, the new center is built in a series of inverted "T's" interconnected by a central passage-way. Among its construction features are outside lighting in all of the 50-odd specialized laboratories and test areas. Air conditioning and overhead recessed illumination are standard throughout the structure, which houses more than 500 specialized pieces of major research equipment in addition to the normal complement of conventional laboratory equipment.

Among the advanced equipment installed in the laboratory for application of physical methods to measurement and analysis are the recording spectrophotometer, electron microscope, infra-red absorption spectrograph, the X-ray diffraction unit, polarograph, emission spectrograph and metallograph. The reference library of the center houses some 2,000 bound volumes and 2,500 miscellaneous technical publications.

Among the individual laboratories and test areas included in the new Canco unit are 12 controlled-temperature storage rooms, a miniature can-perry and food-formulation kitchen, can-making pilot lines for production of experimental metal containers, biochemistry and toxicology areas. Some 140 scientific and technical personnel are housed in the new structure.

In opening the new research center, Mr. Stolk said that one of the



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important missions of the new laboratory would be Canco's "Operation Survival," involving continued work on the "tinless can of the future."

As part of this program, the company is doing extensive work on chemically treated steel, protective organic coatings, combinations of steel with other metals, such as aluminum, welding of side seams to replace the conventional tin-lead solder and cemented side seams, utilizing newly developed types of thermoplastic cements. To date, cemented side seams have found wide application for packaging such products as motor oil, liquid detergents, waxes, dry foods, insecticides, polishes, lighter fluids and frozen-citrus concentrates.

Joining with Mr. Stolk in the formal opening ceremonies were a number of Canco executives, including Dr. Roger H. Lueck, vice president in charge of the Research and Technical Department; Dr. Robert W. Pilcher, director of research; D. F. Sampson, manager of the Technical Service Division; Harold R. Vitense, Development Division, and F. W. Geise, head of the Canco Agronomy Division.

Keeping up with baby

(This article continued from page 87) reportedly have double the point-of-sale impact of the old. A new revolving counter merchandiser for the baby-pants line accommodates four dozen pairs of baby pants. Each section of the revolving display has its own individual display panel which features garment size and garment advantages. The bottom of each panel carries the suggestion "for other sizes turn display."

This merchandiser permits 100% display of the colorful packages. Dealers say they like it because it moves goods fast, is compact, durable, stays clean and is easy to keep stocked.

The Kleinert baby-line packages were planned also with the gift market in mind, inasmuch as recent studies indicate that close to 40% of such merchandise is purchased for gift giving and the new packages serve as attractive gift boxes with their pleasing colors and story-book type of illustrations.

CREDITS: Design program by Alan Berni & Associates, Inc., 7 E. 44 St., New York 17. Folding boxes by Trenton Folding Box Co., 100 Ewing St., Trenton 5, N. J. Revolving wire-rack display by Central Wire Frame Co., 218 E. 26 St., New York.

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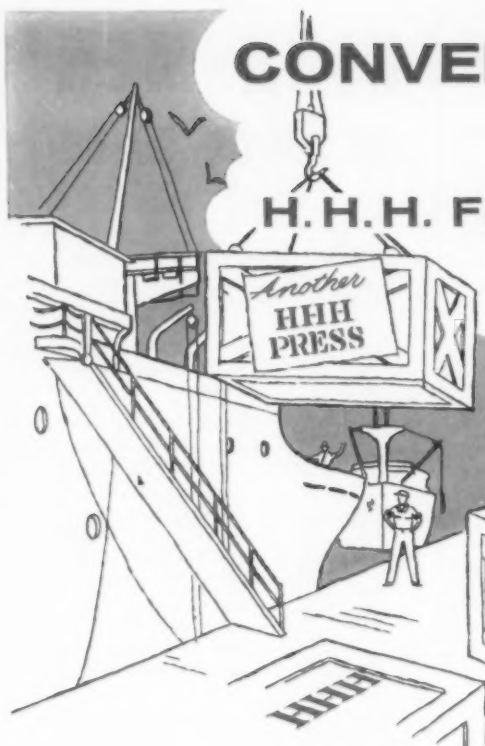
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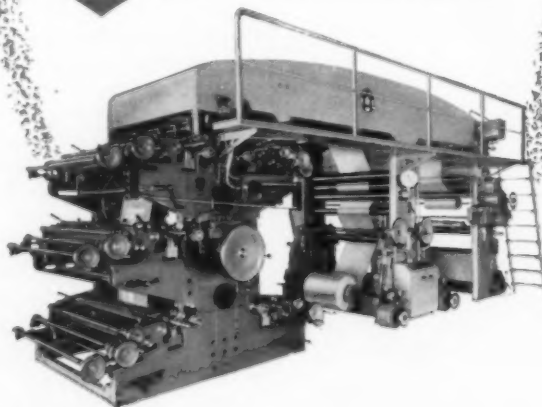
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STATIC ELIMINATOR. Folder, describes company's static eliminator with bars of any size or shape, suitable for application on printing presses and other web processing equipment such as slitters, cutters, paper folding machinery, packaging equipment, bag and wrapping equipment. The Simco Company. (G-551)

SORTING MACHINERY. Booklet describes specialized equipment that separates objects according to hue or brightness. Also described is a pneumatic separating device that sorts and separates objects according to density, size, or shape. Electric Sorting Machine Company. (G-552)

BAG SEALER. Bulletin describes a rotary heat sealer for plastic bag materials with a lineal sealing speed of up to 600 inches per minute. Unit features variable speed drive; is available with adjustable floor base or stand for table use. Pack-Rite Machines. (G-553)

POLYETHYLENE FILM. Handbook contains detailed information about the physical and chemical properties, workability, and reactions to a wide variety of chemicals and solvents of "Cheslene" extruded polyethylene film. Chester Packaging Products Corporation. (G-554)

COLOR REGISTRATION. Catalog offers detailed description of automatic register control for multi-color rotogravure work, provides step-by-step outline of its operation, lists special features available to the packaging and converting fields and describes its suitability for sheeting and blanking operations. Electric Eye Equipment Company. (G-555)

FIBRE CANS. Folder illustrates variety of standard and custom-designed fiber and composite type tubular containers available from this manufacturer. United Can Company. (G-556)

POLYSTYRENE CONTAINERS. Catalog sheet describes and gives specifications of a line of clear polystyrene containers. Rectangular, cylindrical, bowl styles are included. Southern California Plastic Company. (G-557)

MOISTUREPROOF COATING. Technical brochure describes "Pliolite S-7," a synthetic styrene copolymer resin, used as a moistureproof paper coating. Properties, compounding instructions and processing techniques are included. Goodyear Tire and Rubber Company. (G-558)

LIFT TRUCK OPERATION. Twenty-four page booklet, "How To Operate A Lift Truck," contains instructional data on operation of lift trucks, their maintenance, safety rules and materials handling. Hyster Company. (G-559)

FLEXOGRAPHIC INKS. Booklet describes company's fourteen standard flexographic inks; contains ink selector showing inks recommended for use on commonly used packaging materials; offers tips on proper handling of flexographic inks. Bensang Bros. & Deeney. (G-560)

PRINTING EQUIPMENT. Booklet pictures line of printing presses and such auxiliary attachments as tensioners, die cutters, perforators, im printers. Basic press unit is a flat-bed web press that can be hooked up, in tandem, for multi-color work. New Era Manufacturing Company. (G-561)

PLASTIC CLOSURES. Company offers samples of its stock bottle closures of various diameters, including the following types: flat, convex and fluted top; plain, knurled, faceted and detailed sides. Dimensions and prices are included. Scott Plastics. (G-562)

IN-PLANT CARTON MAKING. Literature discusses the economics of made-on-the-spot corrugated shipping containers, then describes company's "Rite Size" machinery for producing such containers when and as needed. Packaging Machinery Division, Colt's Manufacturing Company. (G-563)

LABELING MACHINES. Booklet offers specifications and gives operational details of an automatic labeling unit that can be adapted to the labeling of jars, bottles, cans and boxes. Unit will also do two and three-sided labeling and fancy panel labeling. Alfred Hofmann & Company. (G-564)

STAPLING EQUIPMENT. Catalog pictures, describes company's extensive line of hand and power driven stapling machines, as well as the various staple types usable in them. Bostitch. (G-565)

LABELS. Pamphlet discusses company's "dry" labeling technique and contrasts it with heat seal and glue labeling methods. Special advantages, costs, types and grades are covered. Nashua Corporation. (G-566)

DISPENSERS. Catalog pictures, gives specifications and prices of line of combination closure-dispensers for bottles and jars. Sprayer, atomizer, and unit dose dispensers with phenolic, urea and metal caps are described. Calmar Company. (G-567)

WRAPPING MACHINE. Catalog sheets illustrate and offer specifications of high speed wrapping machines that apply flexible wraps directly to such products as soap cakes, candies, bouillon cubes, tablets and the like. Supermatic Packaging Corporation. (G-568)

POLYETHYLENE WAXES. Brochure describes the properties, applications and compatibility characteristics of a new line of polyethylene waxes known as "Epolene E" and "N." Technical data is supplemented by informative charts and tables. Eastman Chemical Products, Inc. (G-569)

CAPPING MACHINE. Data sheet pictures and provides specifications of an automatic rotary capping machine designed to handle such special cap shapes as applicators, droppers, brush-caps that cannot be handled by usual capping methods. Progressive Machine Company. (G-570)

FLEXIBLE PACKAGING. Folder describes wide variety of flexible wraps, bag and roll stock available from this custom converter of papers, films and foils. Kehr Products Company. (G-571)

PRESSURE-SENSITIVE LABELS. Booklet traces the history of "Kleen-Stik" pressure-sensitive labels, describes applications in the fields of point-of-purchase display, product labeling and packaging. Kleen-Stik Products, Inc. (G-572)

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LIQUID FILLING MACHINES. Bulletin pictures four straight line bottle and can filling machines with capacities from 8 ounces to 5 gallons. Units can be equipped to handle as many as 16 containers at one time. Perl Machine Manufacturing Company. (G-573)

SURFACE PYROMETERS. Bulletin pictures and provides specification data of a varied line of surface pyrometers including roll, extension, mold, needle and combination types. Applications in the printing, coating, paper laminating and paperboard industries are described. Cambridge Instrument Company. (G-574)

LABELING PLASTIC PRODUCTS. Manual outlines methods to be used by proprietary plastics manufacturers in developing informative labeling programs. Includes glossary of useful plastics terminology. Society of The Plastics Industry. (G-575)

CODING EQUIPMENT. Booklet pictures and describes company's extensive line of machines for identification, marking and code-dating of packages. Adolph Gottscho Inc. (G-576)

BUCKET CONVEYORS. Literature describes uses of company's line of bucket elevating conveyors to provide continuous product supply to packaging machinery. Special features, speeds, capacities and principles of operation are outlined. Counsel Machine Company, Inc. (G-577)

FILLING EQUIPMENT. Catalog describes principles of operation of electric filler that, with attachment, will handle liquids, powders and pastes. Pictures, diagrams and schematics show operational details. G. Diehl Mateer Company. (G-578)

ACETATE BOX MACHINE. Data sheet pictures and provides operational details of a fully automatic machine for forming acetate boxes from roll stock. E. C. Staude Manufacturing Company. (G-579)

REINFORCED SEALING TAPE. Folder and sample describe two of company's line of special-purpose sealing tapes: one having waterproof properties, the other with high, all-directional strength. McLaurin-Jones Company. (G-580)

FOAM MATERIAL. Brochure provides detailed information about the manufacture, properties, applications, fabricating and molding of expandable polystyrene. Its special applications in the packaging and display fields are discussed. Koppers Company, Inc. (G-581)

COATING FOR GLUE POTS. Folder describes uses of a resin-proof coating that can be applied to glue pots and other parts of packaging equipment to prevent glue from clinging. Prices included. Federal Adhesives Corporation. (G-582)

LIQUID FILLING. Brochure describes several basic types of volumetric liquid filling equipment and discusses their advantages and disadvantages. Analysis includes description of gravity, piston and vacuum-filling methods. The Mojonier-Dawson Company. (G-583)

HEAT-SEAL LABELING. Bulletin pictures company's line of labeling machines that apply heat-seal labels to flat, tapered and round bottles at rates from 60 to 300 per minute. A discussion of the special features of "dry" labeling is included. New Jersey Machine Corporation. (G-584)

VINYL COATING. Technical manual describes properties, compounding data, and packaging applications for "Geon latex 652," a water dispersion of plasticized polyvinyl chloride that dries at room temperatures. B. F. Goodrich Chemical Company. (G-585)

VIBRATORS. Illustrated catalog contains specifications, installation data, and prices of wide line of electric vibrators for bins, hoppers, chutes, screens, drums, and containers. The Cleveland Vibrator Co. (G-586)

PLIOFILM. Question-and-answer primer presents comprehensive description of this rubber hydrochloride transparent film. Properties, applications, sealability, gauges, types, and sources of supply are covered. Pliofilm Dept., The Goodyear Tire and Rubber Co. (G-587)

VACUUM CLOSURES. Illustrated 32-page catalog describes company's "Vapor-Vacuum" seals and sealing equipment. Principles of the process, its applications in food packaging, types of closures, accessory production-line devices are treated. White Cap Co. (G-588)

CASE SEALER. Brochure gives specifications, features, schematics, and operating details of line of automatic short case sealers with capacities up to 1250 cases per hour. Elliot Manufacturing Co. (G-589)

IMPRINTING. Illustrated data sheet presents details on small rotary coding unit that is attached to conveyors, carton sealers, or other processing equipment and imprints by friction contact on top, bottom, or side of container surfaces. Specifications and schematic drawings included. American Marking Corporation. (G-590)

LIQUID HANDLING EQUIPMENT. Catalog depicts the "Filpaco" line of capping, filling, filtering, storage, agitating, sterilizing, pumping, and conveying equipment used in packaging and handling liquid products. The Filter Paper Company. (G-591)

TEAR TAPE FOR CARTONS. Brochure pictures suggested methods of installing rip-open tape applicator station on existing box-making equipment. Features, advantages, and economies of tear-tapes on corrugated cases are discussed. Industrial Tape Division, Chicago Printed String Co. (G-592)

PREPACKAGING. Folder describes open-top partitioned cardboard tray for pre-packing produce that requires an over-wrap to keep contents from spilling. An accessory carton forming unit is also described. Alford Cartons. (G-593)

BAG CLOSING SYSTEM. Folder describes automatic machine that applies metal fasteners to necks of bags at speeds up to 2,000 per hour. Seal is air tight. Data is also presented on hand- and foot-operated "Vac-Tie" applying machines. Vac-Tie Fasteners, Inc. (G-594)

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By Peerless, of course. The cosmetic industry will welcome this new aluminum aerosol can that has *no bottom seam*—insuring against leakage or seepage and assuring a constant pressure until the product is fully consumed.

Handsome in appearance, it has an eye appeal that will recommend it to a prominent place on the feminine dressing table. And because it functions with complete efficiency, it will have strong appeal, also, to men.

For perfumes, deodorants, hair lacquers and other cosmetic products, Peerless aerosol containers will give perfect performance, rare satisfaction. Why not write today?

Peerless Tube Company

Bloomfield, New Jersey

10-year food outlook

Top officials of 40 major food companies see significant progress ahead

AVOIDED?

STEIGERWALD

SENSI-STICK

LABELS

Pressure Sensitive

NO WATER!
NO GLUE!
Easy as 1, 2 to Apply!

NO CLEANUP!

STICK
TIGHT!

PERMANENT
OR
REMOVABLE

Easy to Apply . . . Sure to Stick!

Gone is the glue pot! Gone is water! Steigerwald Sensi-Stick pressure sensitive labels eliminate forever old-fashioned start-up and clean-up labeling machine jobs.

Sensi-Stick simplifies labeling to a 1, 2—pick and stick quick way—Individual labels or Dispenser automatically feeds individual labels on a tape ready for rapid application.

Economical — Faster Better for all surfaces

Steigerwald Sensi-Stick labels hold securely on all surfaces—won't buckle, curl or rub off even where others fail and nothing else will hold—choice of permanent or easy-to-take-off, surface safe adhesives.

Beautiful designs

Reproduce your present label just as it is on Sensi-Stick or consider a new design with a choice of gold or silver foil; embossed; lustrous papers and sparkling inks to add an extra note of quality to your product. Use Sensi-Stick to show you the way to the world's fastest hand labeling operation.



Phone . . . Wire . . . or Write Today!

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Call, wire or write today for a STEIGERWALD representative to see you at your convenience. Also ask our representative about our complete label design service offered without obligation.

a. m. steigerwald co.

910 West Van Buren Street
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Taylor 9-5400

Are you looking for more than

a high order are assured. The positions carry liberal Civil Service advantages such as retirement benefits, insurance and liberal leave.

10-year food outlook

Top officials of 40 major food companies see significant progress ahead for the nation's grocery manufacturing industry in the next 10 years, according to a special survey undertaken by General Foods.

Advances in food-growing technology, transportation methods and the nature of retail stores are anticipated. Moderate rather than radical changes were predicted in their own company research and product development, in processing methods and automation, in packaging and distribution methods. Moderate increase in advertising expenditures was predicted by 67%. Nearly a third anticipated the same use of couponing and sampling and 63% believe they will continue display allowances and trade deals at about the same rate.

QMC's challenge

(This article continued from page 105) an internal program which would embrace a staff of high-caliber scientists at the Institute to lead and coordinate the program. The second approach is the utilization of facilities and personnel of educational and non-profit institutions, commercial laboratories and industrial facilities.

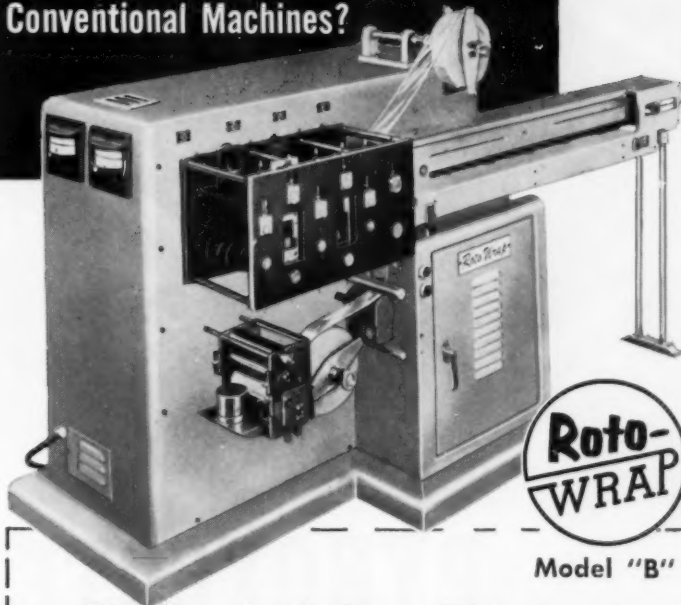
Portions of this program are now in operation. The Balcones Research Center of the University of Texas is actively engaged in research in aerial-delivery systems under contract with the Quartermaster Corps. The Southwest Research Institute, which is developing a shock recorder for use in air drop, is also under contract with the Quartermaster Corps. Basic research on several promising expendable energy absorbers is under way within the QM Food & Container Institute's own laboratories.

The Secretary of the Army has placed the aerial-delivery project at the head of the research and development priority list. This means that full facilities and resources of the Quartermaster Corps will be devoted to the program on a continuing rather than a "one-shot" or "crash" basis.

The Quartermaster Food & Container Institute will expand its staff to meet this urgent research program. Particularly needed are engineers and physicists, recent graduates as well as those of proved ability. The field is far from overcrowded and opportunities for gaining professional status of

AVOIDED ?

Have You Missed Out on
Flexible Packaging's Advantages
because Your Product is a Problem
to Conventional Machines?



Model "B"

The Completely New, High Speed UNIT PACKAGING MACHINE

... An efficient versatile machine for packaging single and multiple products of regular and irregular shapes and characteristics as well as the unique product which has heretofore resisted automatic handling.

- Lightweight, limp, fragile and irregular objects handled with equal facility.
- A basic machine that lends itself to adaption to the peculiarities of particular products.
- Made in different sizes to accommodate a very wide variety of consumer and industrial products.
- Each size machine completely adjustable within its range.
- Soft goods require no supporting stiffener.
- Can use different materials in combination by forming packages from two webs. This represents great savings in preprinting costs and develops wide possibilities for functional packages.
- Intermittent cut-off and perforation.
- Hole punching for display purposes.
- Optional single color printer for coding and price marking.
- Electric eye for preprinted materials.



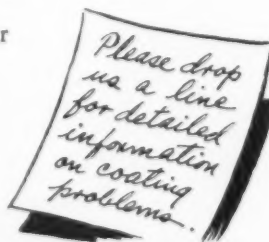
DIVISION **CONAPAC MACHINE COMPANY**
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Are you looking for more than

LABEL VARNISH

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LACQUERS AND ALKYDS

Are you sure it's only gloss your labels need?
How about Abrasion Resistance? Greaseproofness?
Heat Sealing? Frost Shedding? Sparsness?
Alcohol Resistance? Pasteurization? Weathering?
Water Vapor Impedance? High Temperature Packing?
*You can add these functions to gloss, if you employ
Pyroxcote Paper Lacquers and Alkyds. Often you can
do it for as little as a few cents per thousand labels
above ordinary spirit and naptha varnishes.*
Specify Pyroxcote on your own
labels—apply Pyroxcote in your
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*T. M. Reg. U. S. Pat. Off.

a high order are assured. The positions carry liberal Civil Service advantages such as retirement benefits, insurance and liberal leave.

An on-the-spot acquaintanceship with this stimulating program may be made possible by writing to the Commandant, Quartermaster Food & Container Institute for the Armed Forces, Chicago 9, Ill., attention, Associate Director for Research, Container Laboratories.

Sporting goods

(This article continued from page 93)
dozen balls, the base of which serves as a putting hole for indoor practice.

NSGA promotions

Recognizing that the average sporting-goods retail outlet handles many small items which must be purchased in bulk and broken down into convenient units of sale, the National Sporting Goods Assn. as a service to its members makes several sizes of polyethylene envelopes available to them at moderate cost, along with saddle-type labels bearing the individual store name if desired. The labels have a hang-up hole so the bags can be conveniently displayed on peg boards or walls. They are applied to the bags by means of a hand stapler. These bags, which are sufficiently tough to resist tearing even when filled with sharp objects such as golf tees or fish hooks, promote self service and encourage larger unit sales while advertising the store name and keeping merchandise clean.

NSGA has also developed specially imprinted wrapping paper carrying symbolic sports illustrations along with the organization's shield and slogan, "It Pays to Play," and the individual store name. Other special wraps available from the organization include a distinctive gift design for "special occasion" sports-equipment purchases and a Christmas paper showing Santa Claus actively using various types of sporting goods.

As long as Americans love to play, and have the time and money to do it, the sporting-goods field looks like an outlet of great and growing importance for a broad range of packages and packaging materials and related products. Package suppliers would be well advised to investigate the special problems of this industry and to cooperate in solving them.

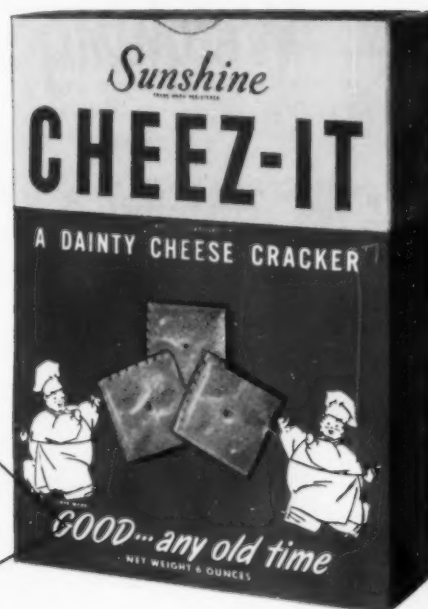
MODERN PACKAGING

Food in metal tubes

A growing interest by food manu-



GOOD... any old time —



**that goes double because they're
PACKAGED BY PNEUMATIC!**



View of Medium Double Package Maker in production of CHEEZ-IT containers at Sunshine plant in Long Island City. Pneumatic machines in adjoining line handle two sizes of Hi Ho cracker packages.

On the CHEEZ-IT package there's a line "Good — any old time." That could mean good anywhere, for any occasion. That's quite true. You could say it again and mean that tasty CHEEZ-IT crackers always keep fresh in the package!

That's true, too — chiefly because CHEEZ-IT crackers are packaged on Double Package Maker equipment designed and built by Pneumatic. These machines produce the famous package within a package — *double* protection — so that CHEEZ-IT crackers lose none of their original just-baked crispness before they're ready to use.

That's worth a great deal to any company competing for the consumer's continuing favor with a perishable product. Leading producers of packaged goods find the lasting, "lower cost per container" efficiency of Pneumatic equipment equally valuable in keeping production costs down to levels that permit profits. They depend on Pneumatic. So can you.

* * *

PNEUMATIC SCALE CORP., LTD., 82 Newport Ave., Quincy 71, Mass.

*Also: New York; Chicago; Dallas; San Francisco; Los Angeles; Seattle;
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Company, Ltd., Toronto*



Packaging and Bottling Equipment

JULY 1955

195

gravate the problem. These sources of infestation are admittedly beyond the

Avery pressure-sensitive Labels

DO YOUR SCALES ADD UP TO A Weighing System?



TODAY IT PAYS TO TAKE A PLANT-WIDE LOOK AT WEIGHING

Do you have the *right* scales in the *right* places? A modern *Weighing System* works hand in hand with your accounting system and makes a *big* difference in helping you win your war on costs. Weight records that originate at scales flow to the accounting areas and directly affect costs, inventories and customer billings. Weighing errors cannot be corrected later—weights must be right the *first* time. That's why it's more than ever important to think of weighing not in terms of isolated scales, but as a vital part of your overall cost-control system.

If you would like to explore this in relation to your plant, why not drop us a line today? No obligation, of course. Ask about the "weighing system plan."
Toledo Scale Company,
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HEADQUARTERS FOR SCALES



PRINTED WEIGHTS
New Toledo Printweigh Scales meet your needs today for closer cost control! Stop human errors in reading, remembering, re-reading... provide accurately printed weights with split-second speed... accurately recorded!

Food in metal tubes

A growing interest by food manufacturers and processors in the use of collapsible metal tubes for packaging paste-like foods is reported by Lester B. Platt, executive secretary of the Collapsible Tube Mfrs. Council. He attributes inquiries on this type of packaging to the food-in-tubes campaign launched by the Council at the recent Packaging Exposition, where the Council distributed thousands of 1-oz. tubes of apple-raspberry jelly. Studies and tests are being conducted on a number of food products which lend themselves to metal-tube packaging, including fish and meat pastes, cheese spreads, lard, mustard and mayonnaise, according to Mr. Platt.

Insectproofing of foods

(This article continued from page 134) ent, but only 53% of those without food. The flour beetle behaved in just the opposite manner, penetrating only 30% of the packages when food was available, but 62% of those without food. The Indian-meal moth penetrated much less frequently than either of the others, but did so more commonly when food was lacking.

Incorporation of Pyrenone into varnishes and lacquers. A number of problems were encountered in mixing the Pyrenone with the coatings. All of the treated cartons were difficult to seal and the seals were readily broken. None of the formulations that performed satisfactorily as coatings were appreciably better than the check in preventing insect penetration.

Pyrethrin substitutes. The packages treated with Everban F1001 were highly resistant to insect penetration at the dilutions used (Table VI).

The packages treated with Everban F1001 had a noticeable odor on them. It persisted in the test cabinet for more than two weeks. It is commercial practice to pack the individual packages in cartons shortly after treatment. This would prevent aeration and it is probable that the odor would persist for at least several days after unpacking.

Conclusion

Insects penetrate food products most commonly when the product is on the retailer's shelves. Frequently the insects found in the product breed in the premises of the retailer. Infested transportation facilities may ag-

gravate the problem. These sources of infestation are admittedly beyond the control of the manufacturer. However, to protect his brand name he must consider them as part of his packaging problem and provide protection against such invasion.

Mechanical exclusion is still the most practical method of dealing with such stored-product insects. There has been considerable improvement in the closure of pre-mix food packages. Regardless of its inherent or added repellency, a food container can successfully resist insect penetration only when possessing a smooth surface and when tightly sealed. If the package is poorly sealed the insects gain entrance readily. Folds, creases, seams and rough spots assist the insect by providing points at which penetration is easily effected. Pour spouts and other "easy-opening" features make it easier for the insects to penetrate the package.

The treatment of containers with chemicals that kill or repel the insects is a decided advance. One of the most promising chemicals is a piperonyl butoxide-pyrethrins mixture, which possesses extremely low toxicity to higher animals. Treatment of pre-mix food packages with different formulations of this mixture has greatly reduced the amount of penetration occurring in periods in excess of normal shelf life.

Chemical treatments can add to the resistance of package materials. They cannot act, however, as substitutes for a well-designed, smooth, properly sealed and durable container.

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Avery pressure-sensitive Labels are easy and fast to use —and they're priced right!

Here's fast, clean, economical labeling. All waste motions are eliminated—for unlike ordinary labels, Avery *pressure-sensitive* Labels are applied dry. One simple motion—a fingertip pressure—and Avery pressure-sensitive Labels are on in an instant...without moistening! Clean, easy application even on hard-to-label surfaces...they won't dry out, pop or peel...and they stay neat and attractive even under temperature and humidity extremes.

*"what a difference they make
— in every department!"*



PRODUCTION LABELING
SIMPLIFIED WITH NEW
AVERY "55" ELECTRIC
DISPENSER

Even more labeling efficiency is now available with this new Avery "55" Electric Dispenser. Every time one label is used, another pops out—*automatically*! No matter how fast, this new dispenser easily keeps pace with labeling operations including speed ups and delays—without adjustment—actually pays for itself with time and money saved!

DID YOU KNOW?.....

that Avery originated pressure-sensitive labeling back in 1935? The benefit of years of experience in solving the requirements and problems of many industries, is at your service to help you develop a low-cost, economical labeling operation. There's no obligation...just explain your problems to your Avery representative — write or call the nearest Avery office listed in the yellow section of your telephone directory!

KUM-KLEEN when you want
a REMOVABLE label.

PERMA-GRIP when you want
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Kum-Kleen.

Perma-grip.

☐ Send me free samples and information on Avery Pressure-Sensitive Labels.

☐ I'd like to know more about the new "55" dispenser.

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WRAPS ALL SHAPES — Square, round, oval, oblong, flat or irregular . . . the Campbell Wrapper packages them all with equal ease and speed.

WRAPS WITHOUT BREAKAGE — Soft, crisp, hard, or fragile, the Campbell Wrapper "float" wraps the material on your product without damage.

WRAPS WITH ALL MATERIALS — Paper, cellophane, polyethylene, foils and all types of the plastic film packaging wraps so popular today.

POSITIVE SEALING — By gluing, crimping or heat sealing with ends flared, turned under or diamond folded. The Campbell Wrapper is now also available for positive VACUUM Wrapping.

AUTOMATIC FEEDS — and deliveries provide continuous flow packaging geared to coincide with in-line production manufacture or separate operation. Write for complete details and send us a sample of your product.



Write for full colored 16-page brochure telling all about the Campbell Wrappers and the many different types of products they package.

St. Louis conference

The second one-day St. Louis Packaging Conference, sponsored by the Packaging Institute, was attended by more than 150 packaging people at the Hotel Statler in that city.

Featured speakers at the morning session were C. W. Harper, manager of informative packaging and labeling for Sears, Roebuck & Co., Chicago, who described a number of in-store packaging case histories and success stories; and Robert deS. Couch, manager, Carton & Container Div., General Foods Corp., Battle Creek, Mich., who made some observations on the purchasing aspects of packaging.

In the afternoon, two panel seminars were held. The first, on bulk packaging, was moderated by Merrill A. Becht of Mark-Andy Co., Kirkwood, Mo. Speakers and topics included R. D. Minter, Monsanto Chemical Co., St. Louis, bulk dry products; Robert Rollins, White-Rodgers Electric Co., St. Louis, bulk machinery; Hollis Johnson, Goodyear Tire & Rubber Co., Akron, Ohio, bulk rubber, and G. S. Macnair, Acme Steel Co., Chicago, bulk unitization.

The second panel dealt with "Merchandising through Better Packaging" and was moderated by C. F. Schokmiller, plant manager, Grove Laboratories, Inc., Clayton, Mo. Speakers included Herbert T. Holbrook of Standard Packaging Corp., Jersey City, N. J., on films and foils; Dr. Mark Wegner of Pet Milk Co., St. Louis, cans and bottles; Philip McGrath of Bemis Bro. Bag Co., St. Louis, bars and overwraps, and L. W. Ledbetter of Ralston Purina, St. Louis, cartons.

Walter C. George, director of research, Gaylord Container Corp., St. Louis, was chairman of the 1955 Packaging Conference, which will be an annual event in St. Louis from now on, according to present plans.

New polyethylene uses

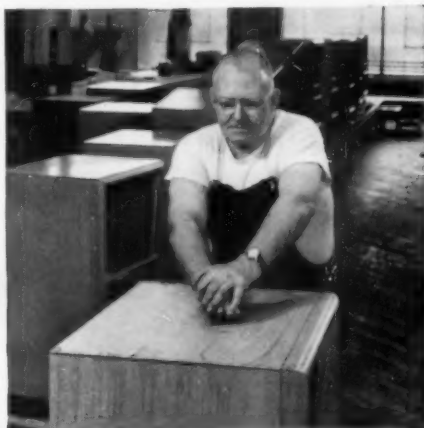
A long list of new packaging uses for polyethylene will boost output of that plastic to 627 million pounds per year, three times present production, in the next five years.

This prediction was made recently by H. K. Intemann, vice president and general sales manager of the Bakelite Co., a Div. of Union Carbide & Carbon Corp., New York, before a meeting of the Specialty Paper & Paperboard Affiliates in Chicago.

Mr. Intemann pointed particularly

MODERN PACKAGING

If it's worth making



It's worth protecting ... COMPLETELY

Safeguard it with



It costs no more to provide the extra protection of Mead paperboard. Whatever your packaging requirement, there's a Mead board especially suited to do the job, and with ample safety margin. The Mead Corporation's seven board mills are strategically located where they grow their own strong-fiber pulpwood. Their personnel knows how to make the best. And Mead specialists are trained to adapt the product to every conceivable need. Kraft linerboard and .009 Chestnut semi-chemical corrugating medium, available in all trims and weights, are the basis of dependable product protection. Let our nearest office discuss your needs.

NEW! HH Chestnut Semi-chemical Corrugating Medium withstands constant exposure to high humidity. Odorless. Its extra rigidity is the answer to your requirements for higher top-to-bottom, end-to-end compression in your containers.

Mead Board is a standard product of

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Sold direct by **MEAD BOARD SALES, INC.**, 3347 Madison Road, Cincinnati 9, Ohio

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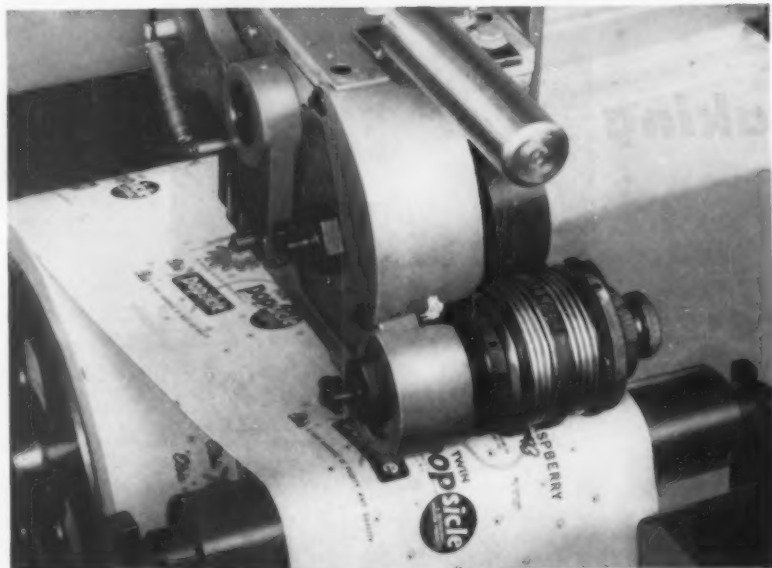
NEWARK 2, NEW JERSEY . . . 10 Commerce Court

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BOSTON 10, MASSACHUSETTS . . . 43 Leon Street

LYNCHBURG 2, VIRGINIA . . . River Road

NOW a wrapping machine attachment that prints codes, other changeable legends on package wraps... automatically



New *Gottscho* "Series 700" Rolaprinter attachment prints cellophane, glassine, plastic films, foil, paper, other materials

Works on new principle that assures accurate, in-register positioning of imprint in any location on wraps

Readily adjustable for different cut-off lengths

Compact and precision-engineered, Rolaprinter unit can be attached to any standard wrapping machine to imprint code-dates, contents descriptions, other identification copy on wraps as part of wrapping operation

Produces sharp, uniform, permanent impression from interchangeable rubber type and instant-drying inks of any color

Write for complete details



ADOLPH GOTTSCHO, INC.

Dept. A, Hillside 5, N. J.

In Canada: RICHARDSON AGENCIES, LTD., Toronto & Montreal

Automatic
CODING, MARKING,
IMPRINTING
MACHINES

to the greatly expanded use of new types of polyethylene coatings on paper and paperboard, and envisioned the annual production of as many as 10 billion non-leaking paperboard milk cartons and 20 billion cigarette packages from this material.

"A coating of polyethylene one-thousandth of an inch thick on only one side of the carton would consume about 54 million pounds of polyethylene per year, based on present milk-carton production," he estimated.

Chief advantages of using this material would be, he said, the extra protection against leakage, damage and collapse during handling afforded by polyethylene's bond strength, moisture resistance and extensibility.

Other future uses for polyethylene-coated paper and paperboard predicted by Mr. Intemann are coatings for cereal boxes, to dispose of the waxed-paper liner, and for cigarette and chewing-gum packages, to eliminate both inner and outer wraps. Still other uses might be temperature-resistant paper cups, ice-cream cartons and frozen-food packages. Among the potential non-packaging uses for polyethylene-coated paper, he described are disposable diapers and sheets.

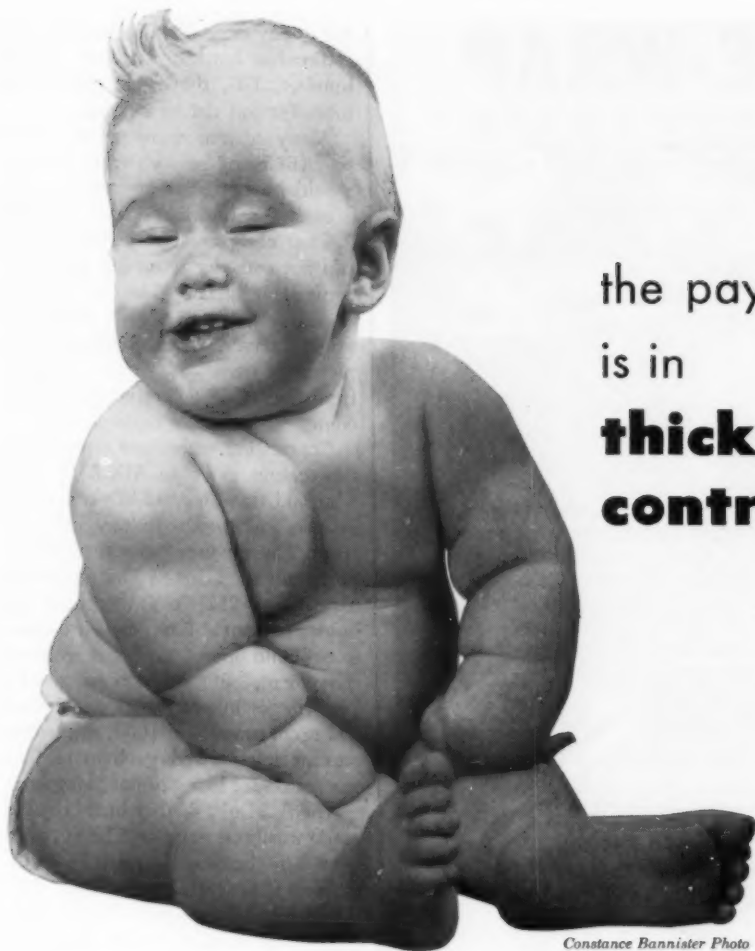
Mr. Intemann recommended to members of the association that they establish voluntary quality standards, saying that, "Our experience, stemming from the very beginnings of the plastics industry, offers proof that there is no substitute for quality."

He pointed out that industry-wide standards of quality for five different plastic applications, approved by the U. S. Department of Commerce, have been established through the initiative of a responsible group of businessmen acting to protect the plastics industry. By adhering to a statement of principles, he explained, five plastics industry trade associations maintain high standards of quality and ethical operations.

Soft-drink survey

Most families still prefer the returnable deposit bottle to either the non-returnable bottle or the can for their soft drinks, says the American Bottlers of Carbonated Beverages.

In a recent survey, the ABCB interviewed 881 families throughout the nation, finding that 95% of them use soft drinks in returnable bottles, but that only 24% of the families interviewed say that they would be will-



Constance Bannister Photo

the payoff
is in
**thickness
control**

VISQUEEN film is the standard of the industry for gauge control. Thanks to its years of experience, The VISKING Corporation, pioneer extruder of polyethylene, offers you an unvarying, uniform film that yields a maximum and constant number of packages per pound

of film—roll after roll after roll.

Another reason why VISQUEEN outsells all other brands of polyethylene.

Converters of VISQUEEN film are leaders in the design and manufacture of flexible packages. They can help you with all your packaging problems. The coupon will bring their assistance.

VISQUEEN®

polyethylene film

... a product of **THE VISKING CORPORATION**

Plastics Division, Terre Haute, Indiana • World's largest producers of polyethylene sheeting and tubing

In Canada: VISKING Limited, Lindsay, Ontario • In England: British VISQUEEN Limited, Stevenage

This advertisement is one of a series telling facts about VISQUEEN film.

IMPORTANT: VISQUEEN film is all polyethylene but not all polyethylene is VISQUEEN. Only VISQUEEN, produced by process of U.S. Patents No. 2461975 and 2632206, has the benefit of research and resources of The VISKING Corporation.

The VISKING Corporation, Box H7-1410—Plastics Division, Terre Haute, Indiana

Send me names of converters of VISQUEEN film serving my area.

Company _____

Name _____

Address _____

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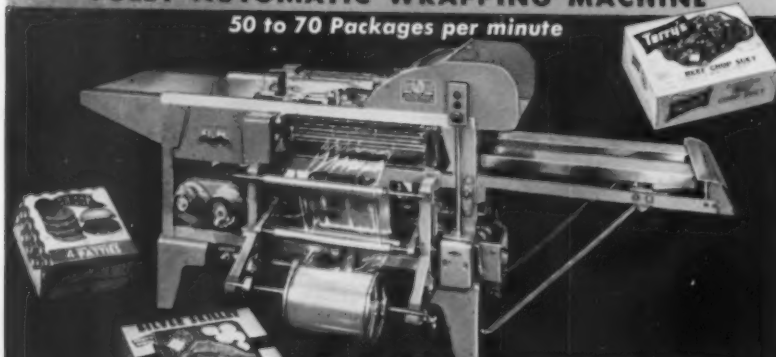


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The GLOBE-WRAP

FULLY AUTOMATIC WRAPPING MACHINE

50 to 70 Packages per minute



The Model GSA adjustable carton Wrapper, and Model GSU adjustable underfold Wrapper, automatically wrap a great variety of sizes and shapes with real economy of operation. They produce precision wrapping at low cost. Easy to operate and maintain, you can cut your packaging costs with this new Globe Automatic Wrapping Machine.

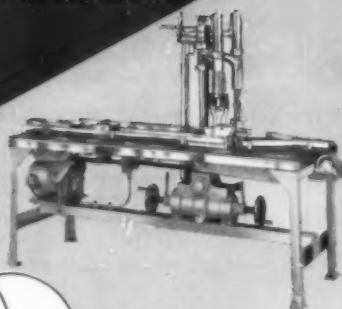


THE GLOBE-WRAP
Semi-Automatic Wrapping Machine
20 Packages per minute

Model EZA—simple, compact in design, with 5 minute changeover to different size packages.

New Combination Globe
Fee Machine Fully Automatic
Can or Carton Filler

Change from one type container to the other within 15 minutes. For lard, shortening, margarine or greases.



THE EXACTO-CLIPPER
Produces air-tight closures. Air powered, applies new, lightweight, strong, inexpensive closure clip. No adjustment required for different casing or bag sizes.

Ask Globe for the answer to your packaging problems today

MANUFACTURERS SINCE 1914



The GLOBE Company

4000 S. Princeton Avenue
Chicago 9, Illinois

NEW YORK • SAN ANTONIO • LOS ANGELES • SAN FRANCISCO • SEATTLE • KANSAS CITY
ST. LOUIS • PHILADELPHIA • NEW ORLEANS • TORONTO • VANCOUVER • THE HAGUE (HOLLAND)

ing to pay more for soft drinks in non-returnable bottles. An even smaller number, 19%, think they would pay more for soft drinks in cans.

Many reasons were given, reports the ABCB, by persons who said they would be unwilling to pay extra for a canned soft drink. These included: "added costs are not justified," 30%; "do not consider returning bottles inconvenient," 20%; "like bottled soft drinks better," 16%; "glass retains the original flavor," 11%; "problem in disposing of cans," 8%; "prefer drinking from bottle," 3%; "prefer glass to see contents," 3%; other reasons, 18%.

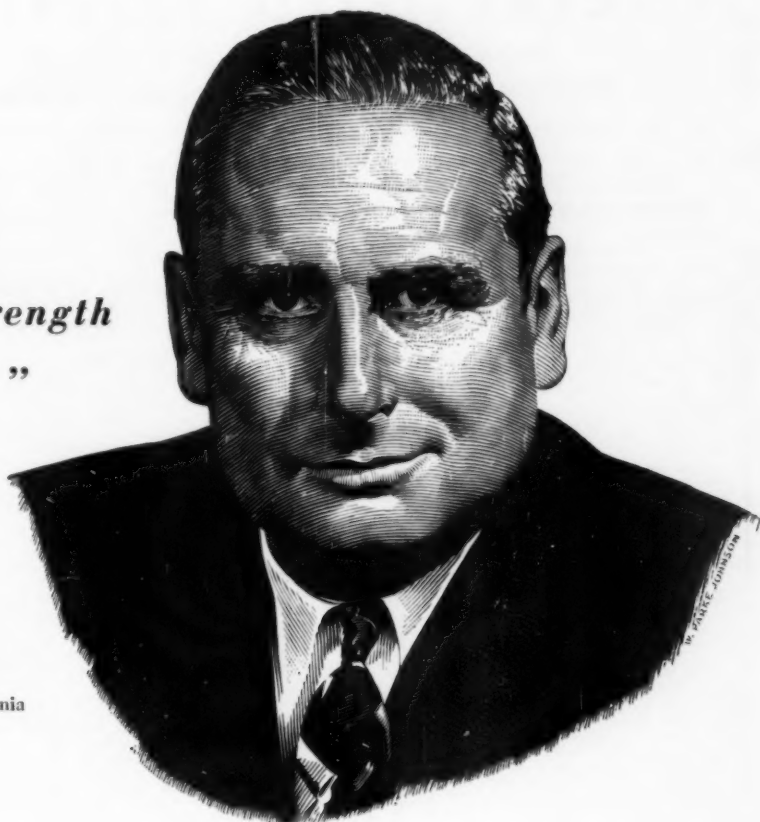
Contrasting with these replies were the reasons given to ABCB by users who said that they did like soft drinks in cans sufficiently to pay extra for them. These were: "no returns or deposits required," 60%; "bottles break, cans don't," 26%; "cans are easier and lighter to carry," 23%; "cans are easier to chill and open," 3%; "cans are more convenient," 3%; other reasons, 15%. Percentages in both these tabulations add up to more than 100%, since some persons interviewed gave more than one reason for liking or not liking cans.

ABCB also asked which size of bottle was most popular. The answers: 6- to 8-oz. bottles, 51%; 10- to 12-oz. bottles, 27%, and larger sizes, 14%. When asked how many bottles they most often bought at one time, the largest number of homemakers, 61%, said that they preferred six-bottle cartons, with 22% saying that they usually bring home fewer than six bottles at a time. However, 8% said they most often buy the 12-bottle cartons and 9% usually buy in case lots.

Some interesting regional differences came to light in the course of the survey, according to the ABCB. For instance, in the Northeast 27% said they would be willing to pay more for soft drinks in non-returnable bottles, while in the West only 17% would. At the same, the same proportion, 21%, would accept a higher price for soft drinks in cans in both regions.

CORRECTION—Through an artist's error, in some copies of the June issue of MODERN PACKAGING the color overprint of the words "old" and "new" was transposed in the cut on p. 134 and the re-designed packages of Airtex Products, Inc., therefore incorrectly identified. The group of packages on the left is, of course, the new, and that on the right the old. We deeply regret this inadvertent misrepresentation of the Airtex company's fine new design.

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is Created . . ."***



REESE H. TAYLOR

President, Union Oil Company of California

"Our country's strength is created by the responsibility and solidarity of individual citizens in a self-chosen government and economy. It can—and must—be perpetuated against all who seek to undermine it. The men and women who invest regularly in United States Defense Bonds are contributing to our national integrity and to the traditions of personal independence so characteristic of a free people."

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- the cash value of Series E Bonds held by individuals on December 31, 1951, amounted to \$34,727,000,000—\$4.8 billions more than the cash value of Series E's outstanding in August, 1945.

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MACHINERY AND EQUIPMENT WANTED

WANTED: Pneumatic Scale Packaging Line, Capper, Labeller, Cellophane Wrapper. P. O. Box 1351, Church St. Station, New York 8, N.Y.

WANTED: Packaging machine for Kraft wrapping reams of paper. Range 8" x 11" to 12" x 15". Box 143, Modern Packaging.

WANTED: Simplex fold bottom bag machine, Chicago area. Write F. A. Richter, 1220 N. State, Chicago, Ill. or phone WH 4-4900.

WANTED—2 TRANSWRAP MACHINES. If you have bargain to offer, call or write Geo. Acred, Phone 6-4208; P. O. Box 191, Memphis, Tenn.

WANTED: Used Kidder Presse—Any size—Must be in operating condition. State Particulars. Box 145, Modern Packaging.

USED MACHINERY WANTED: Cellophane bag making machine for shirt bags. State age, condition, price and details. Neor Ltd., 27, Tooting Bec Road, London, S.W. 17, England.

HELP WANTED

PACKAGING FILM SALESMAN: Clapay Corporation, manufacturer of Clapane, The New Sparkling Clear Vinyl Film, needs additional experienced packaging film representatives in several territories. Give age, experience, territory preferred and other pertinent information. Replies held confidential. I. M. Krohn, Jr., Clapay Corporation, Clapay Square, Cincinnati 14, Ohio.

ADHESIVE CHEMISTS: Established and progressive manufacturers desires experienced chemists to perform research and product development work in utilization of starch, dextrins and resins in varieties of adhesive formulations. Excellent opportunity with outstanding national organization. Send complete information on education, experience and salary desired. All replies confidential. Our employees have been informed of this ad. Box 140, Modern Packaging.

REPRESENTATIVES WANTED: An established converting organization with centrally located plants and doing a national business in the Flexible Packaging Field desires to obtain qualified commission representatives in several states in the Mid-West and on the Atlantic seaboard. All replies will be held in strict confidence. Personal interviews will be arranged. Box 141, Modern Packaging.

SALESMAN: With general knowledge of packaging materials or shipping containers. Live in or near Chicago. This is an opening in an Eastern Manufacturing company for an aggressive man willing to work and travel. Base salary \$4,400 plus commissions and traveling expenses. Automobile necessary. Work is extremely interesting with large earning power. Send complete background, photograph. All replies confidential. Box 144, Modern Packaging.

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A key position in the Engineering Department of a nationally known manufacturer of packaging for the food industries. Should have 15 or more years of experience in creative design and modification of automatic machinery. Desirable age range 35-45. An excellent opportunity in an expanding company located in the heart of Wisconsin's Fox River Valley.

Submit complete resume and photo to:

Placement Department
Marathon Corporation
Menasha, Wisconsin

ASSISTANT TO VICE PRESIDENT OF SALES: We are looking for a man who has been successful in helping develop a "Direct-To-User" sales force on a national basis. Our Company is a medium size manufacturer of Flexible Packaging with general offices in the East and having some thirty years of converting know-how behind us with a terrifically bright future. Our man would be between 30 and 40 years of age and earn between \$7,500 to \$10,000 per annum with added compensation as results are achieved. Reply Box 153, Modern Packaging.

PLASTICS ENGINEER: Opening in progressive Minnesota research and manufacturing plant for experienced plastics engineer. To set up test methods, procedures and equipment, develop heat sealing methods and machinery for flexible plastic sheeting, including polyethylene, mylar, saran, etc. For information, write Box 151, Modern Packaging.

SALESMAN: On Poly-Cell Liver and Offal bags for Supermarkets. Eastern converter who developed and has Patent Pending on Poly-Cell method of packaging liver requires representation in Ohio, Indiana, Illinois and Michigan. Does not conflict with other lines commission basis. Box 147, Modern Packaging.

SALESMEN WANTED: Medium sized company prominent in paper packaging field wishes to employ one or more experienced salesmen in Eastern territories. A knowledge of the fibre can industry helpful but not essential. Men will be paid on a basis of salary, expenses and bonus. Please reply with complete information regarding age, education, experience, etc. Box 149, Modern Packaging.

PLANT ENGINEER: Business forms manufacturer. Some experience in graphic arts or allied industry. Complete responsibility for plant maintenance and engineering. Some design experience preferred. Cost conscious. Complete resume with record of present earnings and salary expected. Box 152, Modern Packaging.

HELP WANTED: Flexographic pressman, Kansas City plant, specializing in transparent films. In need of a man capable of handling complete printing department, including mounting plates and operation of four-color press. Top pay scale. If you are qualified, write immediately, stating experience and listing references. We will assist you in obtaining housing. Box 146, Modern Packaging.

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MANUFACTURERS' AGENT: Cincinnati, desires quality line for volume sales—cans, bottles, closures, or related product. Box 154, Modern Packaging.

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Box 155, Modern Packaging

MISCELLANEOUS

PLASTIC SCRAP & REJECTS IN ANY FORM Cellulose Acetate, Butyrate, Polystyrene, Vinyl, Polyethylene, etc. We pay top prices for clear, colored and printed scrap in any quantity.

Box 139, Modern Packaging

FOR SALE: 2,000,000 Kraft Chipboard Cartons (JANP-120); Kraft Aluminum Lined or Poly Lined Heat Sealable Envelopes (JANP-117); V3C Cartons (JANP-108); Casseline Envelopes; Grade A 1/2 lb. bags; Clear Hot Melt Plastic Wax; Silver Paper Shredder. Priced to Move. Will Consider Offers. Lesco Products Co., 4205 Fullerton Ave., Detroit 38, Mich.

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For further information address Classified Advertising Department, Modern Packaging, 575 Madison Avenue, N. Y. 22, N. Y.



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Here's where A-C POLYETHYLENE makes the big difference:

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ALLIED CHEMICAL & DYE CORPORATION
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My proposed use of A-C POLYETHYLENE is: _____

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MODERN PACKAGING

Introducing

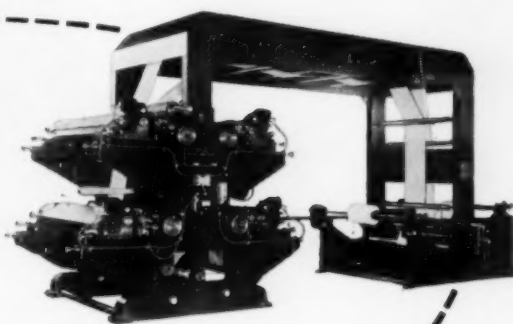
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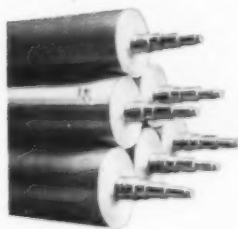
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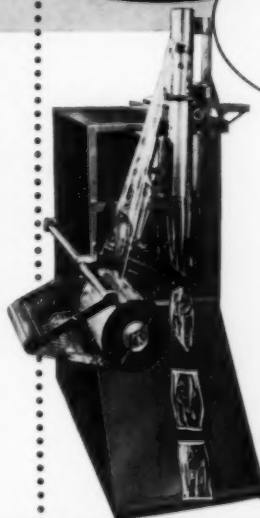
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Styrene Plastic

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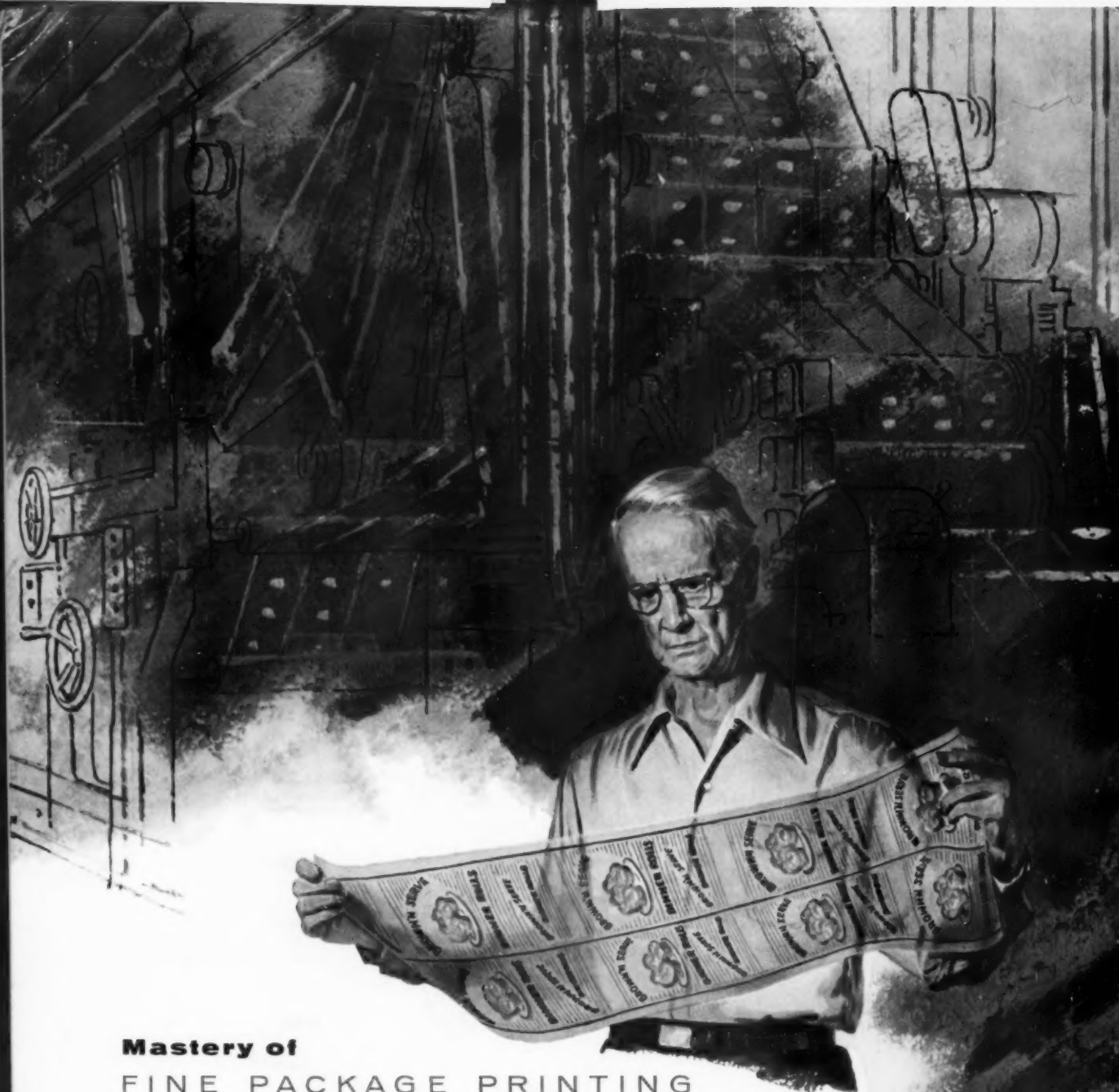




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BATTLE CREEK, MICHIGAN

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Package Makers to the Nation



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